The 10-year federal IT spending spree is over, a new study shows.
A start-up formed by former Red Hatters readies a new version of Linux.

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KNOWLEDGE CENTER E-MAIL/GROUPWARE

SUITE HOSTING

Big Decisions

Nothing affects the workplace like a change in e-mail systems or collaboration tools. This special report covers the choices IT managers face regarding suites and upgrades. Stories begin on page 35.

Ever misfired a sensitive e-mail? Readers reveal their worst e-mail nightmares

Microsoft Delays Ship Date of Windows Update Services

Vendor must finish XP Service Pack 2 first

BY CAROL SLIWA
TORONTO

Users will have to wait even longer for already-delayed updates of security-focused products and services that Microsoft Corp. pledged would be ready by now.

At its Worldwide Partner Conference here, Microsoft officials disclosed that Windows Update Services won't ship until the first half of next year. WUS, which was formerly known as Software Update Services, can be used to automate patch distribution to employees on a scheduled basis.

At last October's Microsoft Worldwide Partner Conference, CEO Steve Ballmer said the free patch management service would be ready in the first half of this year. In March, Microsoft revised the release date to the second half of this year, and last week, the vendor pushed it back again.

Mike Nash, vice president of Microsoft's security busi-

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NEWSPAPER

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MORE INSIDE

Users Freeze IT Systems as Sarb-Ox Looms

Software installations, upgrades put off until 2005 to avoid last-minute compliance glitches

BY THOMAS HOFFMAN

Many companies plan to lock down their financial systems and other applications in order to help streamline efforts to meet Sarbanes-Oxley compliance deadlines that start taking effect late this year, according to a dozen IT managers and consultants who were interviewed last week.

Section 404 of the Sarbanes-Oxley Act requires companies with market capitalizations of $75 million or more to attest to the effectiveness of their IT and financial controls when they file 10-K reports for fiscal years that end after Nov. 15. To help maintain controls that have been fully audited and tested, IT executives such as Mark Thompson have decided to postpone until early 2005 systems rollouts and upgrades that otherwise would have taken place during the fourth quarter — or even earlier.

"We went through a whole reprioritization of IT projects for '04," said Thompson, senior vice president of finance and IT at Crown Media Holdings Inc., a Greenwood Village, Colo.-based cable TV company that distributes the Hallmark Channel and other programming in 120 countries.

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a3250

For instance, Crown Media postponed a planned replacement of accounting applications from The Sage Group PLC with Microsoft Corp.'s

Sarb-Ox, page 53

Boeing Bets Big on Cisco With VoIP System for 150,000

Deployment called largest for one vendor

BY MATT HAMBLEN

The Boeing Co. last week said it will install up to 150,000 voice-over-IP phones and other networking equipment from Cisco Systems Inc. over the next five to seven years — a project that analysts called the largest VoIP deployment thus far involving one vendor.

Boeing expects to buy 130,000 to 150,000 of Cisco's VoIP phones as part of the planned rollout, said Mike Terrill, program manager for network convergence at the Chicago-based aircraft manufacturer. It will also replace about 125 circuit-based telephone switches with an undisclosed number of Cisco-made IP switches, he said. In addi-

Boeing, page 53

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Protecting the Data Jewels

In the Management section: A list of your company's best customers is a prized asset and possibly a trade secret. But it could wind up in the hands of your competitors unless you take several legal, management and technical steps. **Page 29**

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6 **The e-voting debate** takes a turn as the ITAA president weighs in with claims of a "religious war" between proponents of open-source and proprietary software.

7 **IBM adds mainframe** partitioning technology to its Unix servers.

7 **Supercomputing** development in the U.S. needs stronger government support, a Ford IT exec testifies.

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20 **Maryfran Johnson** is beginning to suspect that the bounty of IT spending promised for 2004 won't show up next year, either.

20 **Pimm Fox** doesn't want the federal government mucking up the VoIP market the way it has mucked up telecom.

21 **Michael Gartenberg** believes we need to do a better job of explaining to users how technology can help them.

26 **Curt A. Monash** tackles indiscriminate fear by taking a realistic look at information security threats.

32 **Barbara Gomolski** says the real technology recovery won't kick in until IT leaders face reality, focus on value and help usher in the next big thing.

54 **Frankly Speaking: Frank Hayes** knows that the numbers might argue against instituting a proper e-mail policy, but he still thinks it's the right thing to do.

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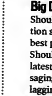
KNOWLEDGE CENTER E-MAIL/GROUPWARE

Big Decisions

Should you buy a collaboration suite or assemble the best products yourself? Should you upgrade to the latest version of your messaging system or stay on the lagging edge? This special report will help you decide. **PACKAGE BEGINS ON PAGE 35**

SPECIAL REPORT

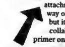


36 Suite Dilemmas. Like Minnesota Life's Jean Delaney Nelson (left), most IT managers choose messaging and collaboration suites because of their simplicity and ready-made integration. But they don't fit every company.

38 Keeping a Tight Grip. Customers haven't embraced e-mail outsourcing. Some consider messaging simply too crucial to hand over to a third party. But smaller companies welcome the chance to offload their complicated, management-intensive e-mail systems

40 You Go First. How do you decide that it's time to upgrade your company's e-mail system? Many CIOs like to stay a version or two behind their vendors' latest offerings, until the ROI for an upgrade is clear.

41 QuickStudy: Sharing files by e-mailing them back and forth as attachments is a common way of exchanging data, but it's a long way from collaboration. Here's a primer on the latest software in the collaboration tool kit.



42 The Almanac. How to take the politics out of e-mail migrations. And how to send walkie-talkie voice messages via e-mail.

44 Opinion: Can't live without e-mail? Columnist Mark Hall thinks you can — and will — when it soon becomes more trouble than it's worth.

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Editor's Picks
A guide to the best of *Computerworld's* coverage of e-mail topics, such as viruses, spam and regulatory compliance.
QuickLink 48811

Top Five Mistakes
E-mail is so important to companies that it must be available and secure around the clock. Mirapoint's Jeff Brainard lists the most common mistakes that can threaten e-mail security.
QuickLink 48827

You've Got Mail
Readers tell us about the problems they've had with e-mail in this collection of Shark Tank anecdotes.
QuickLink 48040

Best Buy, Accenture Finalize IT Contract

Best Buy Co. said it has finalized a seven-year IT outsourcing and consulting contract with Accenture Ltd., which will take over management of the retailer's IT infrastructure plus application development and maintenance. About 600 IT workers will shift from Richfield, Minn.-based Best Buy to Accenture as part of the deal, which took effect on Friday. The financial terms weren't disclosed.

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IBM Tops Profit Plan, Lags on Sales

IBM reported a higher-than-expected profit of $2 billion for the second quarter, up 17% year over year. Revenue totaled $23.2 billion, 7% above the year-earlier figure but lower than Wall Street analysts had forecast. IBM was the latest vendor to disclose a shortfall in software sales during the quarter [QuickLink 48066]. CFO Mark Loughridge said some expected software deals didn't come through in late June.

Short Takes

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Federal IT Spending Expected to Slacken

New spending controls, offshoring and contractor scandals are key factors

BY DAN VERTON

A DECADE-LONG growth spurt in federal IT spending is about to come to an abrupt end, according to a report released last week.

The report by New York-based Datamonitor PLC forecast a 4% compound annual growth rate for federal IT spending during the next five years. In the past 10 years, spending grew at an annual rate of 5% to 10% and has been steadily increasing, according to the report.

The federal government's fiscal 2004 IT budget stands at $46 billion. Datamonitor predicts that federal spending on IT will grow to only $56.5 billion by 2009. According to the report, customer citizen relationship management, enterprise resource planning and security will be the driving factors behind the increase.

However, Datamonitor analysts said new management and spending controls, recent contractor scandals such as CACI International Inc.'s involvement in Iraqi prisoner abuse [QuickLink 47209], and fallout from Bermuda-based Accenture Ltd.'s win of the multibillion-dollar US-VISIT program [QuickLink 47639] are presenting challenges to an unbridled spending romp driven in recent years by homeland security requirements.

"Shadows have been cast on the federal vendor community through these recent events," said Jocelyn Young, the author of the study and Datamonitor's research director for health care and public-sector technology.

Security Not a Catalyst

But even homeland security spending, which Young said is a key driver of growth in overall federal IT spending, is being scrutinized more closely, particularly as that spending relates to federal grants for state and local governments.

Referring to the size and scope of state and local spending requirements, former Virginia Gov. James Gilmore, who chaired a congressionally mandated commission to study terrorist threats, said last week that the U.S. "is in danger of expending all of our national treasure and breaking the economy of this country on homeland security." Gilmore made the comment at the Iowa Governor's Homeland Security Conference in Des Moines.

But a key to understanding IT funding for homeland security is distinguishing between new money and money that's being reallocated from other projects, said Young. As a result, "the net impact of homeland security funding on IT spending by the federal government may not be as dramatic as one might think," she said. 48203

AT SEA

The Navy doesn't know how much it spends on telecommunications services

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U.S. Federal IT Vendor Opportunity by Technology Segment

	FY2004	FY2009
Communications	$8,418.5M	$9,781M
Hardware	$5,480.8M	$5,605.3M
Services	$21,384.6M	$29,184.4M
Software	$7,945.7M	$9,769.5M
Other	$2,182.0M	$2,148.3M
TOTAL	[illegible]	$56,488.5M

ITAA Fires Back at Critics of E-voting

Sees open-source agenda at work

BY DAN VERTON

The president of an influential IT vendor association is accusing electronic voting system critics, many of whom are IT security researchers, of using the issue of e-voting security to wage a "religious war" that pits open-source software against proprietary software.

Harris Miller, president of the Arlington, Va.-based Information Technology Association of America, said a recent ITAA survey showed that 77% of registered voters are unconcerned about the security of e-voting systems. Miller said critics who claim to be concerned about the security of e-voting systems are really using the issue to push a political agenda on behalf of the open-source community.

"It's not about voting machines. It's a religious war about open-source software vs. proprietary software," said Miller. "If you're a computer scientist and you think that open-source software is the solution to everything . . . then you hate electronic voting machines. But if you're a person who believes that proprietary software and open-source software can both be reliable, then you don't hate electronic voting machines."

MILLER: "It's not about voting machines. It's a religious war."

Eric Raymond, president of the Open Source Initiative, a nonprofit organization promoting open-source standards and criteria, said Miller has the issue wrong. "Most [e-voting] critics, including me, aren't focusing on open-source vs. closed-source at all, but rather on the lack of any decent audit trail of votes — one that can't be corrupted by software," he said.

Kim Alexander, president of the California Voter Foundation, called Miller's argument "nonsense." "Every technologist that I have worked with believes that even if we had open-source software, we would still need a paper trail," she said. "There would be no guarantee that the software that was inspected by the public would be the same software that is running on every machine in every jurisdiction in the country."

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SUIT FILED

The e-voting debate heats up in California

QuickLink 48228
www.computerworld.com

AT DEADLINE

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AT SEA

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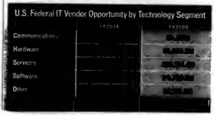
U.S. Federal IT Vendor Opportunity by Technology Segment

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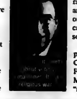

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The e-voting debate heats up in California:

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IBM Adds Mainframe Technology to Unix Servers

Power5 line seems to deliver big performance leap

BY PATRICK THIBODEAU

Gregory Martin, integration manager at Royal Caribbean Cruises Ltd., is interested in IBM's Power5-based servers, including a new Unix server line announced last week. But he wants IBM to produce benchmarks comparing application performance across various IBM systems — not just against competitors' products.

Martin's Miami-based company uses IBM iSeries (formerly the AS/400) and pSeries Unix/Linux servers. Benchmarks showing operating system performance across multiple IBM lines would help him make the best server choice for his applications, he said.

"If we don't have a benchmark that compares a pSeries to an iSeries from an OS perspective, then it's hard to compare that to a different technology" from another server vendor, he said.

IBM has no plans to produce internal benchmark comparisons because the iSeries and pSeries hardware architectures are identical, said Jim McGaughan, director of IBM eServer strategy. If a company is interested in comparing the performance of the eServer i5/OS operating system with that of AIX, it's likely to be considering a migration, he said. In that case, IBM would help the user evaluate workload performance on both systems, McGaughan said.

The RISC-based Power5 processor is dual-core, but unlike the Power4 chip, it has simultaneous multithreading capability. That means it can run two instruction streams in real time, or up to four threads in parallel.

A Game of Leapfrog

Server makers are in an endless game of leapfrog with chip performance, say analysts, but the Power5-based Unix and Linux servers appear to be a significant leap.

IBM is "now pulling in intellectual property from other lines of business," such as logical partitioning from its mainframe group and virtual engine technology from its Tivoli Software group, said Brad Day, an analyst at Forrester Research Inc. in Cambridge, Mass.

But while these Unix systems are becoming more mainframelike, they aren't mainframes.

wants benchmarks to compare IBM systems to one another

Dave Ennen, IT director at Winnebago Industries Inc. in Forest City, Iowa, uses an IBM zSeries mainframe to run his company's most critical applications. He doesn't see Unix or other servers replacing the mainframe, despite the addition of microprocessor partitioning technology to the Unix servers. "The reason we have the mainframe is we don't ever want it to go down, and anything short of the zSeries doesn't have that kind of dependability," said Ennen.

IBM officials said a wide gap remains between the capabilities of mainframes and those of systems running Unix. For instance, unlike with Linux or Unix systems, the risk of someone cracking into a mainframe system "is almost zero," said Ravi Arimilli, an IBM fellow and chief architect of the IBM Systems Group.

Unix will eventually close the gap with improved security, availability and virtualization, said Arimilli. "When will that crossover happen? I don't think it's anytime soon," he said, estimating that it would be at least a decade.

But the mainframelike processor virtualization capability in eServer Power5 systems will help Benton Harbor, Mich.-based Whirlpool Corp., which just took delivery of a two-way Power5 system.

Virtualizing on the processor level means that Whirlpool can reduce the number of separate network and storage-area networking cards it needs, as well as cut licensing costs on management and monitoring systems that charge on a per-CPU basis, said Robert Gamso, senior principal systems architect at the appliance maker. The Power4 hardware required separate adapters; the Power5 does not. It "doesn't always make economic sense" to add cards to achieve virtualization, Gamso said. 48212

Some Say U.S. Supercomputing Needs a Jump-start

BY PATRICK THIBODEAU
WASHINGTON

Legislation intended to strengthen supercomputing development in the U.S. is being endorsed by a Ford Motor Co. IT official who maintains that the government's emphasis on parallel processing in supercomputing is undercutting research and hurting the country's ability to compete.

The U.S. House of Representatives this month passed two supercomputing-related bills: HR 4218, the High-Performance Computing Revitalization Act of 2004, and HR 4516, which seeks about $200 million in funding for supercomputer development at the U.S. Department of Energy.

The legislation aims to bring a coordinated approach to federal supercomputing development and require U.S. agencies to make supercomputers available to researchers.

Vincent Scarafino, manager of numerically intensive computing in Ford's supercomputing program, has testified in Congress on the need for a larger federal role in supercomputing development.

In an interview, Scarafino said the U.S. has been losing its edge in supercomputing because of a shift, beginning in the mid-1990s, to parallel processing using relatively inexpensive commodity components instead of concentrating on developing new kinds of processors. That has led to reduced investment by the government, he said.

Not Pushing the Envelope

Parallel processing has cut prices and helped increase productivity. But there has been a trade-off, said Scarafino.

"We can do analysis now that is cheaper than it was five years ago, and that's great. But we're not pushing the envelope like we used to," he said. "Instead of learning how to do new things, we're learning how to do old things cheaper." Scarafino compared it to eating one's seed corn.

Parallel processing is also labor-intensive, requiring the expertise of computer scientists to program so problems can be solved simultaneously. In contrast, classic supercomputers that rely on very fast, specially designed vector processors "could be programmed in Fortran," Scarafino said. "They could be programmed in a language that mere mortals . . . could program in."

Kevin Wohlever, director of operations of the Ohio Supercomputer Center's Springfield facility, agreed that the push toward parallel processing in the U.S. has been a hindrance.

"If we keep trying to make all codes fit into the cluster environments, we're losing the opportunity to make the codes that run best in the vector environment," said Wohlever. He said government-backed supercomputer development efforts in Japan and Europe have improved weather forecasting there. Japan has the world's largest supercomputer.

Glossary

SUPERCOMPUTER: A very large system built to handle computationally intensive workloads. What constitutes a supercomputer is a moving target, and the list of the most powerful supercomputers is constantly changing. See *www.top500.org*.

PARALLEL PROCESSING: A computing method that uses two or more commodity processors, all working on different aspects of the same program at the same time.

VECTOR PROCESSING: A computing method that uses specially designed processors to handle large amounts of data.

The Washington-based Computing Research Association, which represents academic and business research groups, praised the legislative effort but noted that next year's proposed federal budget for IT research is 0.7% below this year's allocation.

Rep. Judy Biggert (R-Ill.), one of the bill's authors, said she hopes the measures will get federal agencies "to really jump-start the next generation of high-end computers." Biggert's legislation has White House support.

Biggert said she believes that the U.S. has lost ground competitively and that U.S. companies need federal research leadership in supercomputing. "What goes into providing this type of computer they can't do on their own," she said. 48211

BRIEFS

Nortel Restates 2003 Earnings

Nortel Networks Ltd. last week said its net earnings in 2003 will be restated downward by 50%, and net earnings based on continuing operations last year will be eliminated with the change. The restatement will essentially wipe out its net earnings for the year, the Brampton, Ontario-based company said.

Adaptec Buys Snap Appliance for $100M

Network adapter card maker Adaptec Inc. last week said it will acquire storage server vendor Snap Appliance Inc. for approximately $100 million. San Jose-based Snap Appliance, which makes network-attached storage servers for file sharing, will become a division of Milpitas, Calif.-based Adaptec. Adaptec said the acquisition will expand its external storage product portfolio and systems channel business.

IBM Expands Analytics Offering

IBM last week announced that it's acquiring privately held AlphaBlox Corp. in Mountain View, Calif., to gain technology that makes it easier for developers to embed intelligence technology into business applications and processes. IBM said AlphaBlox software will be offered first as a stand-alone product and will then be embedded through IBM's middleware suite. The value of the deal wasn't disclosed.

Short Takes

CISCO SYSTEMS INC. appointed Charles Giancarlo to the position of chief technology officer, a post that has been vacant since 2000. . . . ORACLE CORP. and the U.S. Department of Justice filed closing briefs in the government's case to block Oracle's hostile takeover bid for PeopleSoft Inc., paving the way for closing arguments this week.

ON THE MARK

HOT TECHNOLOGY TRENDS, NEW PRODUCT NEWS AND INDUSTRY GOSSIP BY MARK HALL

Ma[illegible] Outsourcing Deals . . .

. . . involving more than one outsourcer operating from more than one location is increasingly common for many IT shops, says John Bostick, CEO of dbaDirect Inc. in Florence, Ky. He says more and more of his 100 corporate customers have struck outsourcing deals with the likes of IBM Global Services, Electronic Data Systems Corp., Keane Inc. and other big outsourcers. But they still want to take advantage of his company's focus on databases as well as the low overhead he has from running his main data center out of Boone County, Ky. That means he's coordinating work requests from user sites and giant outsourcers' data centers. Despite Bostick's fervent belief that U.S.-based specialized outsourcers such as dbaDirect can effectively compete with offshore operations, he's had to add database administrators in Bangalore to meet "follow-the-sun" demands from clients. Currently, dbaDirect manages 2,500 databases, with 45 to 50 being run by a senior DBA who has an operations specialist in tow. At the moment, Bostick says, Oracle and SQL Server are running neck and neck, each with 45% of the database work dbaDirect has under contract. "But Microsoft is growing like a weed," he says. Sybase makes up 8%. DB2 and Informix fight over the scraps. MySQL has cropped up in a couple customer conversations, he says, "so we're looking into it for the future."

750k
Events projected by dbaDirect among databases managed in 2005.

Catching Killer Calls for . . .

. . . complex document management operations. Dave Ryan, IT director and senior deputy prosecutor for King County in Seattle, recalls that nailing Gary Ridgeway, the infamous Green River Killer, began with a paper trail of three-ring binders investigators used in the 1980s when the string of brutal murders began. Eventually, Ryan says, he had "a whole roomful of three-ring notebooks." Not having the staff on hand to digitize the mountain of information, Ryan turned to Chameleon Data Corp., also in Seattle. CEO Derek Dohn says his team had to digitize the data and organize it in three formats for different users — the prosecution, public defenders and, ultimately, the public at large. Ryan says that a key moment in the gathering of evidence came when investigators discovered that unique paint samples from Ridgeway's workplace were discovered on three victims' bodies. The prosecution had already tied Ridgeway to four other murdered women who were prostitutes that the then-suspect claimed he had coincidentally met. Technology from eCopy Inc. in Nashua, N.H., "that feels like a garden-variety copier to paralegals" was used to scan the paint-sample lab-report information into the document management system so that it was immediately available in the different formats used by both the prosecution and the defense. Once the defense attorneys had the new data, they knew "the coincidence argument fell apart," Ryan says. Ridgeway soon pleaded guilty to 48 murders, ending the hunt for the worst mass murderer in U.S. history.

Managing docs key to prosecution

Swift Data Center-To-Data Center . . .

. . . backups possible with HyperIP, a proprietary network appliance that uses your IP network. That's the claim from Craig Gust, CEO of Network Executive Software Inc., also known as Netex, in Maple Grove, Minn. He says HyperIP sits between a standard IP switch and a very-high-speed WAN link. Gost boasts, "HyperIP achieves 90% throughput with 1% packet loss at up to 46,000 circuit miles distance." And that's before the appliance applies data compression. HyperIP works with a host of "qualified applicatinos," says Gust, and this week will add Veritas NetBackup, McData iFCP and others to the list. One appliance costs $19,750 for 10Mbit/sec. performance. You'll pay incrementally more for up to 480Mbit/sec. Remember to multiply that by two because you need one device on each end.

HyperIP suffers only 1% packet loss.

PHP Developer Makes Splash . . .

. . . this week with the news that it's moving its headquarters from Israel to the U.S., releasing Version 5 of the world's leading server-side scripting language, unveiling two product upgrades and picking up more than $8 million in venture capital. Zend Technologies Inc., now in Cupertino, Calif., has kept its R&D operations in Israel, but CEO Doran Gerstel says that with more than half its customers here, it makes sense to move to Silicon Valley. Its release of open-source PHP 5 improves the language's object-oriented capabilities. And the company's Zend Studio 3.5 for PHP developers will include 30 templates to speed coding. Also, Zend Performance Suite 4.0 boosts PHP performance two to three times through improved content caching and other techniques. It's all available now. 48190

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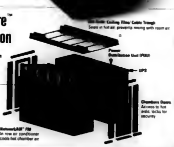
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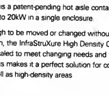
Oliver Rist, Senior Contributing Editor,
Brian Chee, Industry Expert
***InfoWorld**, 3/12/2004*



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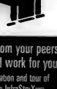

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Start-up Pitches Customizable Linux OS to Corporate Users

Novel Specifix plan enables full support

BY TODD R. WEISS

TWO FORMER Red Hat Inc. Linux software engineers are creating a version of Linux for corporate users that they say will allow custom code modifications to be made while maintaining full support for the rest of the operating system.

San Jose-based Specifix Inc., which was founded last year, was preparing to launch an alpha release of the unnamed operating system last week, according to co-founder Erik Troan. The release of a shipping version is expected by the end of the year.

Troan said corporate users are often unable to customize Linux software without invalidating support from the original vendor. Specifix hopes to solve that problem by allowing users to modify the desired code and provide their own support for changes. Specifix will continue to support the rest of the unmodified Linux operating system.

Tracking Changes

Specifix has also created an open-source application called Conary — a distributed system that allows developers to track and monitor changes made to the Linux code — to allow user companies to modify and tailor the software as needed.

Conary will allow the construction, deployment and management of a single Linux code base across an unlimited number of configurations and hardware platforms, according to the company. Conary was released last week to the developer community under IBM's open-source Common Public License.

Several corporate Linux users said the new offerings from Specifix are innovative but predicted that demand for them will be fairly limited.

Scott Clark, director of IT systems at call center outsourcer Sitel Corp. in Omaha, said most corporate users he hears about are using Linux for "bread and butter" things such as e-mail, Web and file servers, and other infrastructure tasks where major code changes aren't needed. "All those kinds of things are well documented and easily done and supported by the major Linux vendors," he said.

Clark said he hasn't yet had to change the Linux code, though Oracle Corp. has provided a kernel tweak when one was needed for a database application. "It strikes me as somewhat of a niche market," he said of the upcoming products from Specifix.

> **“In our case, we don't have the time . . . to experiment and to play with the kernel.**
>
> **JOE POOLE**, TECHNICAL SUPPORT MANAGER, BOSCOV'S

Joe Poole, technical support manager at Boscov's Department Store LLC in Reading, Pa., said his organization has no need for such services because its Linux operating systems are "plain vanilla" as delivered by the vendors: "In our case, we don't have the time to do that sort of thing, to experiment and to play with the kernel," Poole said. "We have not come up with anything yet that would require that."

However, at least one enterprise Linux user said that while such help may not be needed very often, there are cases when it could be valuable. Such a service could be useful in situations where Linux doesn't perform as well as Unix, said Mike Prince, CIO at Burlington Coat Factory Warehouse Corp. in Burlington, N.J. "In those cases, having somebody out there that could pick up the support on these systems might actually be an asset," he said. "I think there's a market out there and it is indeed an issue. I think the approach is very rational."

Leigh Day, a spokeswoman for Raleigh, N.C.-based Red Hat, said her company welcomes Specifix to the marketplace to help serve customers who want to make changes to their operating system software, which would be outside of Red Hat's standard support policies.

"Red Hat ultimately endorses choice for the customer," Day said. "The more choices, the better." 48213

Microsoft to Link Enterprise Instant Messaging Server With Rival Networks

BY JUAN CARLOS PEREZ
AND TODD R. WEISS

In a move that advances instant messaging interoperability, Microsoft Corp. will open up communication between its enterprise IM server and the IM networks run by its MSN division and by rivals Yahoo Inc. and America Online Inc.

Microsoft's Live Communications Server (LCS) 2005, due to ship in the fourth quarter, will allow users to exchange instant messages with users on AOL Instant Messenger (AIM), Yahoo Messenger and MSN Messenger.

"This has been the top request from our corporate customers. They have told us that anything we could possibly do to make this happen would make them the happiest," said Taylor Collyer, Microsoft's senior director for LCS.

Graham Lawlor, chairman of the New York-based Financial Services Instant Messaging Association, which represents seven Wall Street financial firms working to promote IM standards, called the LCS release "the most significant announcement in the enterprise IM industry since there was such an industry."

IM is critical to investment banks for trading, sales operations and more, he said, but the challenge has been that users have had to run multiple IM clients. Being able to connect users to all three of the largest IM systems using LCS brings a "fundamental sea change in the industry," Lawlor said.

The link between LCS and the three IM networks will be provided through add-on modules that will be sold separately, Collyer said. Pricing for the modules will be announced later this year.

Representatives from AOL and Yahoo indicated separately that the collaboration with Microsoft is a significant step for their respective IM services in the corporate market.

"This will open up new opportunities for all of us," said Brian Curry, senior director of AIM network services at Dulles, Va.-based AOL.

"Through our relationship with Microsoft LCS, we are able to increase the distribution, usage and presence of Yahoo Messenger while providing our users with a secure, convenient and seamless experience," Lisa Mann, senior director of Yahoo Messenger at Sunnyvale, Calif.-based Yahoo, said in a statement.

Robert Mahowald, an analyst at market research company IDC, said the LCS announcement will change the market dynamics for companies such as IMlogic Inc., FaceTime Communications Inc. and Akonix Systems Inc., which make gateway software that lets different IM clients interact. "They're definitely going to have to sort out a new role" that stresses how they can help customers gain control over IM use for compliance with logging, archiving and other regulatory requirements, he said.

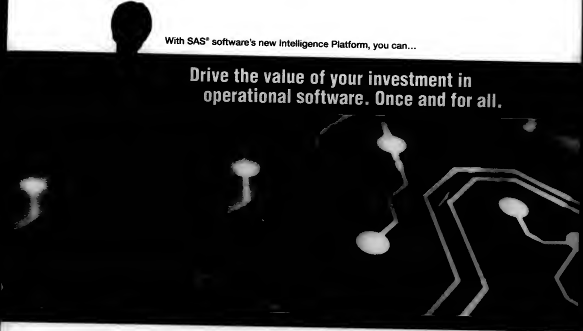
> **“[The pending LCS release is] the most significant announcement in the enterprise IM industry since there was such an industry.**
>
> **GRAHAM LAWLOR**, CHAIRMAN, FINANCIAL SERVICES INSTANT MESSAGING ASSOCIATION

Francis deSouza, CEO of Waltham, Mass.-based IMlogic, said LCS will do for IM what SMTP did in solving a bottleneck for e-mail. "We've been waiting for this for almost eight years," deSouza said. "This is very exciting for everybody."

Dmitri Shapiro, co-founder and chief technology officer of San Diego-based Akonix, said LCS interoperability will mean "much wider adoption of IM" in the workplace. Customers will still want Akonix to provide its layers of management, security, archiving and auditing, he said, even after LCS is in use.

"This in no way damages our business," said Shapiro. "This dramatically increases our business."
48207

Perez writes for the IDG News Service.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NBC Seeks Network Stability for Olympics

Works with AT&T on six redundant connections for feeds from Athens

BY MATT HAMBLEN

WHEN NBC Universal begins its television coverage of the summer Olympic Games from Athens next month, the broadcasting and cable TV company will use three satellite network linkups and three land-based connections to ensure that its video, audio and data transmissions are redundant.

The six connections, which were set up by AT&T Corp., are designed to ensure 99.99% reliability, or about one minute of downtime per week, according to officials from the two companies. NBC will be able to send live feeds from Greece to the U.S. over all six links at once or use them for separate transmissions.

"An Olympic event is a one-time event, and there are no do-overs," said Bob Kiraly, director of broadcast and telecommunications operations at NBC, in an interview from Athens last week. "Everything we plan for in our networks or our Athens operations center is really based on a failure scenario. You certainly can't tell a marathon runner that you need to run it over [because of a network issue]."

Kiraly added that the six layers of network redundancy are accompanied by built-in systems redundancy at NBC's on-site network operations center. All servers, switches, routers and power supplies have one or two backups, he said.

"We have to be very careful how we move our pictures back and forth, because that's our product," said Kiraly, who arrived in Athens in May, although network preparations for the broadcasts began a year ago. Kiraly and his staff, which he wouldn't number for security reasons, will work 12-hour days leading up to the games and expect to be on the job almost around the clock during the 17-day event.

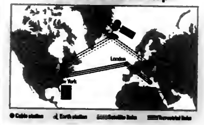
From Aug. 13 to 29, NBC plans to carry 1,210 hours of coverage on its various TV outlets — its flagship broadcast network plus MSNBC, CNBC, Bravo, USA Network and the Spanish-language Telemundo. That's about three times the amount of coverage that NBC provided from the 2000 Summer Olympics in Sydney, Australia. In addition, high-definition broadcasts will be offered for the first time from several Olympic venues.

AT&T is helping NBC design, deploy and manage the satellite networks and land-based circuits, which will connect to NBC's facilities in New York via undersea fiber-optic cables owned by AT&T, said Mike Jenner, the vendor's vice president of enterprise networking services. NBC and AT&T have an eight-year contract to broadcast the Olympic Games, dating to 2000. Neither company would disclose its value or what it will cost to set up and operate the networks for the Athens games.

Jenner said part of the challenge of building the network to Athens was arranging in a short time to use terrestrial networks owned by other carriers, such as British Telecommunications PLC and Athens-based OTEGlobe. AT&T also had to set up cable and satellite stations in both Athens and New York to transmit and receive broadcast feeds (see graphic).

Kiraly said there have been no significant problems in building the Athens network operations center, despite reports of delays in the construction of Olympic venues and facilities. "The people of Athens had a big challenge and are rising to it," he said. "There have been many construction issues, but I have yet to see anything delivered to us late." 48184

NBC Universal/AT&T Olympic Games Broadcast Setup



Quantum Adds Data-Protection Technology to Tape Storage Line

WORM capability will prevent data overwrites, it says

BY LUCAS MEARIAN

Quantum Corp. today plans to announce a firmware upgrade for its super digital linear tape (SDLT) products that will create a write-once, read-many capability designed to help users preserve data as part of regulatory compliance efforts.

The DLTIce firmware will be available tomorrow via a free download from Quantum's Web site. The new offering supports the San Jose-based company's SDLT600 drives and SDLT II cartridges, its latest tape technology. But a spokesman said Quantum is considering the idea of offering DLTIce across its entire line of DLT and SDLT devices.

Quantum isn't the first tape drive vendor to embrace write-once, read-many technology, or WORM. Sony Corp. added WORM support to its Advanced Intelligent Tape and Super AIT products in March, and IBM and Storage Technology Corp. offer the feature in their enterprise-class drives.

But Sony, IBM and StorageTek require users to buy new cartridges that are preconfigured for WORM, said Robert Amatruda, an analyst at IDC. In addition, DLT and SDLT tapes are used much more widely than AIT and SAIT devices are, according to Amatruda. He said Quantum's technologies accounted for about 40% of the $821 million market for midrange tape storage last year, compared with 8% for Sony's product line.

Tape drives that support WORM could be a boon for users who want to better safeguard archived data, Amatruda added. "More and more companies are interested in things like compliance and unalterable data protection products," he said. "You don't have to buy and support a separate device that will enable WORM capability."

Partners in Health is a Boston-based nonprofit organization that does medical research and provides free health care in Latin America, the Caribbean, Eastern Europe and the U.S. Yusuf Karacaoglu, the organization's MIS and networking coordinator, said he's looking forward to downloading DLTIce to help protect patient research documents, which he backs up onto SDLT600 drives.

Karacaoglu currently has to use a separate server loaded with software from AuthentiDate Holding Corp.'s DocStar unit, which makes a scanning device for turning paper documents into electronic records that can be stored on optical disks, hard drives and other storage media.

"The good part is we don't have a lot of money to spend on this technology, so [DLTIce] meets our expectations at the moment," Karacaoglu said. The DocStar system informs him if a document has been changed, but it doesn't provide WORM capabilities that prevent data from being overwritten, he added.

DLTIce lets users designate new or existing tape cartridges as WORM media when they're being initialized. The firmware then creates a unique electronic identification number for each tape and blocks any overwrites of data, Quantum said.

The technology can't prevent data from being erased or scrambled. But if that happens, the identification number is still stored on the cartridge, revealing that it previously held data, the company said. 48194

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BRIEFS

Senator Introduces Phishing Bill

Sen. Patrick Leahy (D-Vt.) on July 9 introduced the Anti-Phishing Act of 2004, which would define phishing as a federal crime punishable by up to five years in jail. The bill would outlaw the act of spoofing a Web site in an attempt to "induce, request, ask or solicit any person to transmit, submit or provide any means of identification to another."

NetForensics Wins Deal With DOE

NetForensics Inc. in Edison, N.J., last week said the U.S. Department of Energy will use its nFX security information management software to monitor about 400 network security products at 10 National Nuclear Security Administration sites. The deal comes after a string of high-profile security gaffes within the DOE that may have resulted in leaks of secret information about the U.S.'s nuclear arsenal.

IBM Opens Dev Center in Taiwan

IBM last week said it has set up a development center for its xSeries servers in Taiwan in order to be closer to Taiwanese hardware manufacturers. IBM said the xSeries Taiwan Development Center, which is the first such facility it has established outside the U.S., will play an important role in helping it build closer relationships with Taiwanese hardware makers for the development of servers based on processors from Intel Corp.

Short Takes

SAP AG acquired A2i Inc. to broaden the data management capabilities of its NetWeaver platform. . . . SECURE COMPUTING CORP. rejected an unsolicited bid from rival CyberGuard Corp., saying the offer wasn't in the best interests of shareholders.

Microsoft Patch Release Plugs Two Critical Holes

Vendor issues total of seven patches

BY PAUL ROBERTS

MICROSOFT Corp. last week released seven security patches, two of which fix holes that the vendor deemed "critical" because they could allow remote attackers to take control of vulnerable Windows systems.

The software updates include fixes for previously unknown holes in the Windows operating system, including critical holes in the Windows Task Scheduler and HTML help features.

Microsoft also published a patch for a recently disclosed hole in the Windows Shell application programming interface (API) and fixed a hole in older versions of the Internet Information Services (IIS) Web server.

The seven updates were released in accordance with the company's monthly patching schedule.

One of the two critical patches fixes a hole in Windows Task Scheduler, a Windows component that lets users schedule commands, programs or computer scripts to run at specific times. A buffer-overrun vulnerability in the Task Scheduler could allow a malicious hacker to place and run attack code on vulnerable systems.

The second of the two critical patches fixes two more newly discovered holes in the Windows HTML Help feature. One hole, in a component called showHelp, causes an error in the way Windows processes a type of help file known as a CHM file. The second hole affects the way Windows checks data in help files. It could allow an anonymous user to set up a Web site containing code designed to trigger the vulnerability.

Microsoft also patched four holes rated "important," which indicates that exploitation could result in the compromising of data, but not the creation of an Internet worm. In MS04-021, Microsoft issued a patch for customers using IIS Version 4.0 and Windows NT 4.0. A buffer-overrun flaw fixed by that patch could allow a remote attacker to take control of a system by sending a specially crafted message to the vulnerable IIS server, causing it to run the attacker's code, Microsoft said.

Despite being rated "important" rather than "critical" by Microsoft, the MS04-021 hole is of particular concern to security experts at McAfee Inc., according to Vincent Gullotto, vice president of the Anti-Virus Emergency Response Team at McAfee. Like the vulnerabilities that led to the Blaster and Sasser Internet worms, the IIS 4.0 hole could enable malicious hackers to take total control over servers without requiring them to trick users into clicking on a link or visiting a Web page, he said.

Limited Scope

The fact that the vulnerability affects only organizations that use Windows NT and IIS 4.0 limits its reach somewhat, but many companies still use those products and could fall victim to an attack, said Gullotto.

McAfee experts are also concerned about the showHelp hole plugged by MS04-023 and the Shell API hole fixed by MS04-024. In both cases, proof-of-concept code has been released on the Internet that could make it easier for less-sophisticated hackers to launch attacks targeting the security holes, he said.

"[Proof-of-concept code] simply increases the risk that it will attract attention from a virus writer, who could create something quicker," Gullotto said. "It just ups the ante for a zero-day attack." 48166

Roberts writes for the IDG News Service.

Microsoft Monthly Patch Summary

MS04-018 (M) Denial-of-service vulnerability in Outlook Express

MS04-019 (I) Privilege-elevation vulnerability in Utility Manager

MS04-020 (I) Privilege-elevation vulnerability in Posix subsystem

MS04-021 (I) Buffer-overrun vulnerability in IIS 4.0

MS04-022 (C) Remote code execution vulnerability in Task Scheduler

MS04-023 (C) Two remote code execution vulnerabilities in HTML Help

MS04-024 (I) Remote code execution vulnerability in Windows Shell

M - MODERATE I - IMPORTANT C - CRITICAL

SOURCE: MICROSOFT CORP

Trojan Horse Spreads Via Mass Spam Mailing

ANTIVIRUS AND E-MAIL security companies last week sent out warnings about a new Trojan horse program that they claim is being mass distributed on the Internet by means of spam.

The program, called Backdoor-CGT, is a new form of a Trojan horse that's installed when users of Microsoft's Outlook e-mail program follow a Web link embedded in an e-mail message. The Trojan horse was believed to have infected thousands of systems even though antivirus software and up-to-date versions of Outlook are immune to attack, said Maksym Schipka, senior antivirus researcher at MessageLabs Ltd. in Gloucester, England.

MessageLabs received more than 3,600 e-mail messages with links to the Trojan horse during a two-hour period, the result of a spam distribution that was more than 10 times the normal amount for such a program, he said. Trojan horse programs give remote attackers access to or control over machines on which they run, and they often run unnoticed by users or pose as legitimate applications.

The Backdoor-CGT program uses a "multistage" attack to place malicious code on victims' computers. After clicking on an e-mail link embedded in the spam message, victims go to a series of Web sites, each of which carries out one stage in the attack.

The attack takes advantage of a now-patched flaw in Outlook called the "IFRAME" exploit to hide the Web site redirections from the user and silently download and install the Backdoor-CGT program, Schipka said.

McAfee also released an advisory about the new Trojan horse, which is also known as "SS," but rated it a "low" threat to users. McAfee has released software update files to detect the Trojan horse, according to the advisory.

–Paul Roberts

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Continued from page 1

Microsoft

ness and technology unit, attributed the delay to the security-focused Service Pack 2 for Windows XP. Microsoft announced last week that SP2 is due for release in August.

"The key issue [with WUS] is that our updating technology is a core part of how Windows XP Service Pack 2 is going to ship," Nash explained. "That team is working on getting SP2 done, and as soon as SP2 is done, we'll be able to go focus on getting Windows Update Services done. . . . You can't do the two in parallel."

Nash cited encouraging signs that the initial version, SUS, is seeing greater usage. At last year's partner conference, when attendees were asked if they used SUS, the vast majority of hands stayed down. This week, the number of raised arms was noticeably higher. Nash said that jibes with statistics showing that some 112,000 unique servers connect to Microsoft each day to check for content using SUS.

WUS is currently available as a private beta. A public beta is due toward the end of the year, said Gytis Barzdukas, a director of product management at Microsoft.

WUS can be used to patch not only Windows but also Office, Exchange and SQL Server. Unlike SUS 1.0, it lets users target specific computers, get basic reports and download only changed patch bits.

Russ Cooper, senior scientist at TruSecure Corp., a Microsoft Gold Certified partner in Herndon, Va., said he's bothered by the delays, but he also recognizes that Microsoft must take as much time as it needs to get the security updates right. "Considering how dramatic this all is, they'd better not screw up," he said.

"When I hear 'delay' when it comes to security, I intuit they need to work on it before they feel comfortable sending it out," said Bob Crownhart, director of infrastructure at Premera Blue Cross in Mountlake Terrace, Wash. "And to me, that's good news. That's less painful than if they put out something that wasn't ready for prime time."

Like WUS, the Microsoft Update service that Ballmer said would be ready by now is being delayed to the first half of next year, Nash said. Microsoft Update is a single place on the company's Web site where patches for all of its products will be available.

Another delayed offering is Microsoft's Network Access Protection technology. IT administrators will be able to use it to set policies to determine whether users have updated patch and antivirus protection. If the machines aren't compliant, administrators can restrict network access and use tools to make sure they are updated.

When Microsoft discussed the technology in the past, it referred only to the ability to quarantine remote users in virtual private networks (VPN), according to Steve Anderson, director of Windows server marketing. Network Access Protection technology will be more broadly applicable to any type of connection, he said.

Network Access Protection is due to ship in the second half of 2005 with the update to Windows Server 2003, code-named R2. But one systems management analyst at a California-based health insurer, who asked not to be named, said his company primarily uses Windows 2000 Server and would find it helpful if Microsoft also made the technology available for that operating system. "A lot of shops, including ours, will not see Windows Server 2003 for probably a couple of years," he said.

Microsoft plans to publish the API and turn it over to a standards body, but it hasn't determined which one, Anderson said. More than 25 of Microsoft's partners, including Computer Associates International Inc., McAfee Inc. and Symantec Corp., announced support for Network Access Protection. A notable no-show was Cisco Systems Inc., but Anderson said Microsoft hopes to reach an agreement with Cisco soon.

Also last week, Microsoft announced the on-time delivery of its Internet Security and Acceleration Server 2004, an application firewall, VPN and Web cache product. But it hasn't seen wide corporate usage to date. "Most large companies are looking for industrial-strength solutions," said one IT manager, who asked not to be named. 48208

Updated Microsoft Security Road Map

At last October's Worldwide Partner Conference, CEO Steve Ballmer detailed the company's plans for new security products and services. Here's what happened

DELIVERED ON SCHEDULE **Internet Security and Acceleration Server 2004; shift to monthly releases for nonemergency patches; security seminars; monthly webcasts; IT Pro Secure Zone online site**

PRODUCT	ORIGINAL PROJECTED SHIP DATE	CURRENT PROJECTION
Windows XP Service Pack 2	First half of 2004	August
Software Update Services 2.0, now known as Windows Update Services	First half of 2004	First half of 2005
Single Microsoft Update site for all patches	First half of 2004	First half of 2005
Patching enhancements (fewer patch installers; smaller patches; rollback capability; reboot minimization)	First half of 2004	Some completed; some in progress
Windows Server 2003 Service Pack 1	Second half of 2004	Second half of 2004
Next-generation inspection technology, now called Network Access Protection	Second half of 2004	Second half of 2005

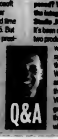
SOURCE: MICROSOFT CORP., REDMOND, WASH.

REPORTER'S NOTEBOOK

Microsoft addresses Linux threat, Software Assurance with its partners:
QuickLink a4770
www.computerworld.com

Flessner Pledges More Frequent SQL Server Releases

Some users were disappointed earlier this year when Microsoft announced that SQL Server would be delayed for a third time – until the first half of 2005. But Paul Flessner, senior vice president of Microsoft's server platform division, last week told *Computerworld* the important second beta is due within weeks and the product remains on track for next year.



A year ago, you seemed certain that SQL Server would ship in 2004. What happened? Was the delay related to the integration of the Visual Studio .Net development tools? It's been complicated to keep the two products close together, and we have to keep them in sync. It's mostly, I think, the depth of integration. When you see the beta and you get to be writing these stored procedures in Visual Studio and then you get to see the interaction, I think you'll understand why it's taken longer.

Some users were anxious to see the new features. I want it right, and that's my commitment. We've always had good, high-quality releases of SQL Server, and we're going to have another super-high-quality [release]. From the time we release Beta 2 here in a few weeks until the end of the first half of next year, we've got a long time to really clean the things, stabilize and get all the polish on it. And we're going to hit it hard.

Don't you face pressure, when competitors release products more often? I'd commit that you're going to see more regular releases from us.

With SQL Server? Absolutely. I know that we can do a more regular release cycle. This one [SQL Server 2005] was just particularly tricky because of the depth. Even this release, if I had it to do over again, I might have done it slightly differently. Instead of releasing Reporting Services and Notification Services outside [the major product release cycle], I might have bundled them in and just done an R2-type thing. Those are both good value adds. We could have done a release with that, and maybe we should have. So there is some thought going forward about how to do that.

Is it being driven by the need to improve the Software Assurance maintenance plan? Yeah. Customers need value on a regular basis, and I think it's a good way to do it.

– Carol Sliwa

THERE'S MORE

Go online for more of this interview.
QuickLink 48227
www.computerworld.com

COMPUTERWORLD

Executive Bulletin

IP Communications

Voice-over-IP is changing the way we think of, and manage, communications.

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All Roads Lead to IP

TO CONSUMERS, IP telephony means making cheap long-distance phone calls over the Internet. But for corporate America, the convergence of voice, video and data on a single IP network is much more. It's a dramatic new way of thinking about, and managing, communications, with voice traffic acting like any other packet on the network and telephones acting as just another network client.

Converged IP networks allow for a wide variety of new applications to ride on the network and interact, including IP telephony, audioconferencing, videoconferencing, unified messaging and presence technologies (like chat).

Getting Started

Corporate America is just starting down the road to voice-over-IP (VoIP) communications, though every analyst says it's just a matter of time before it becomes mainstream. "By 2009, the installed base of IP [communications] equipment will dominate the enterprise landscape, but that's still a few years away," says Robert Rosenberg, president of Insight Research Corp. in Boonton, N.J.

There are several reasons why VoIP hasn't been an overnight success. Companies started testing the waters of VoIP in 2001, but there were serious concerns about voice sound quality that slowed the momentum (those concerns have been largely resolved). Moreover, one of the key reasons for implementing VoIP was to reduce the long-distance charges associated with the traditional phone networks, yet those charges have dropped so low that those cost savings are less dramatic.

The cost of IP phones is another reason for the slow pace. "The cost of going VoIP is certainly a factor here, since the price of newer IP phones will continue to be about 25% higher than the [traditional] alternative," Rosenberg says.

"VoIP never was and never will be the least expensive way to deliver voice to the enterprise, but the allure of VoIP's rich applications like video telephony will slowly convert legacy customers," he adds.

Indeed, there are a variety of reasons for moving to a converged IP network. Users report benefits such as the following:

- **Much lower costs for audioconferencing.**
- **The ease of moving, adding and changing phones.**
- **The fact that the IT staff can manage a single network infrastructure out of the data center, instead of two or more very different networks.**

Thumbs Up

Early users are giving a thumbs up to converged networks, saying their technology choices have saved money and made their voice communications setups more flexible. Some implement pure VoIP systems, while others rely on a hybrid of IP and circuit-switched technologies. Either way, the users say they're realizing greater efficiencies just by starting to merge their voice and data networks.

IBM, for example, is rolling out a global VoIP network over the next five years that's expected to cut voice/data communications costs by 25%, according to Fred Spuleck, director of global voice infrastructure at IBM. One efficiency will come from lowering the number of IBM's private branch exchange (PBX) switches from the current count of about 900 to just 11 IP-based PBXs, Spuleck says.

Pure VoIP supporters say their systems are more resilient and can more easily support video or voice conferencing as well as new data applications. For example, IBM's new VoIP network will allow easy creation of an audioconferencing system that will cut the company's annual costs for that capability in half, Spuleck says. A VoIP project at SouthTrust Bank in Birmingham, Ala., will save $1 million annually on conference calling alone and "several million dollars" overall, says Stanley Adams, the bank's group vice president of network services.

On the other hand, users of hybrid systems say they want to hold on to the value of large investments in time division multiplexing (TDM) switches, and they suggest that a hybrid network would provide a backup if a major virus or other security incident affected their data networks.

GMAC Commercial Holding Corp. in Horsham, Pa., has adopted a hybrid approach that relies on older TDM switches but also provides IP telephony capabilities configured on top of a Multiprotocol Label Switching service to 106 locations globally, says CIO Niraj Patel. The annual costs should be 5% to 10% less than GMAC Commercial Holding's previous system, with last year's savings amounting to $120,000, he says.

But hybrid implementations are just a temporary phase in the evolu-

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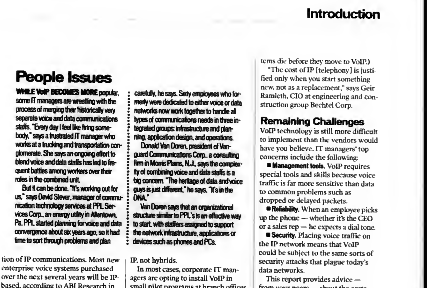
TCP/IP and VoIP protocols

IP telephony servers and PBXs

VoIP gateways and routers

IP phones and softphones



People Issues

WHILE VoIP BECOMES MORE popular, some IT managers are wrestling with the process of merging their historically very separate voice and data communications staffs. "Every day I feel like firing somebody," says a frustrated IT manager who works at a trucking and transportation conglomerate. She says an ongoing effort to blend voice and data staffs has led to frequent battles among workers over their roles in the combined unit.

But it can be done. "It's working out for us," says David Stever, manager of communication technology services at PPL Services Corp., an energy utility in Allentown, Pa. PPL started planning for voice and data convergence about six years ago, so it had time to sort through problems and plan carefully, he says. Sixty employees who formerly were dedicated to either voice or data networks now work together to handle all types of communications needs in three integrated groups: infrastructure and planning, application design, and operations.

Donald Van Doren, president of Vanguard Communications Corp., a consulting firm in Morris Plains, N.J., says the complexity of combining voice and data staffs is a big concern. "The heritage of data and voice guys is just different," he says. "It's in the DNA."

Van Doren says that an organizational structure similar to PPL's is an effective way to start, with staffers assigned to support the network infrastructure, applications or devices such as phones and PCs.

tion of IP communications. Most new enterprise voice systems purchased over the next several years will be IP-based, according to ABI Research in Oyster Bay, N.Y. The research firm says that by 2006, 90% of all new IP phone systems shipped will be pure IP, not hybrids.

In most cases, corporate IT managers are opting to install VoIP in small pilot programs at branch offices or new locations. (Plus, PBXs generally have a seven- to 15-year life, so companies often wait until their PBX systems die before they move to VoIP.)

"The cost of IP [telephony] is justified only when you start something new, not as a replacement," says Geir Ramleth, CIO at engineering and construction group Bechtel Corp.

Remaining Challenges

VoIP technology is still more difficult to implement than the vendors would have you believe. IT managers' top concerns include the following:

■ **Management tools.** VoIP requires special tools and skills because voice traffic is far more sensitive than data to common problems such as dropped or delayed packets.

■ **Reliability.** When an employee picks up the phone — whether it's the CEO or a sales rep — he expects a dial tone.

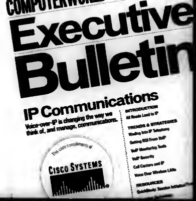
■ **Security.** Placing voice traffic on the IP network means that VoIP could be subject to the same sorts of security attacks that plague today's data networks.

This report provides advice — from your peers — about the costs and benefits of IP communications, as well as how to solve those management and security issues.

Voice-over-IP will dominate the enterprise in the next few years – are you ready? It's a dramatic change, but **Computerworld's new Executive Bulletin on IP Communications** will help you get there! Early adopters are already saving millions of dollars. Get this report to learn the new lingo and obtain advice from your peers on hot topics such as monitoring tools, security and ROI.

For a limited time, get this full report (a $49.95 value), for free compliments of Cisco. www.computerworld.com/ipbulletin

QuickLink to a4700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San Francisco • August 5, 2004

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7:45am to 8:15am	Registration and Networking Breakfast
8:15am to 8:45am	**Rebuilding the IT Foundation** Maryfran Johnson, Editor in Chief, Computerworld
8:45am to 9:15am	**Consolidation and the Data Center: Boosting Business Performance and Application Availability** Matt Eastwood, Research Director, Global Enterprise Server Solutions, IDC
9:15am to 9:45am	**Perspectives from the Chicago Mercantile Exchange** Steve Goldman, Director, Network Architecture, Chicago Mercantile Exchange
9:45am to 10:15am	Refreshment and Networking Break
10:15am to 10:45am	**User Case Study** Alejandro Lopez, System Architect, University of California Davis Medical Center
10:45am to 11:15am	**Customer Challenges and Solutions: Real-Life Scenarios Connecting Data Centers Over Distance** Steve Adolph, CTO, Enterprise Solutions Group, CIENA
11:15am to noon	**Panel: Overcoming Management Barriers — Making the Case for Consolidation** Panel Moderator: Maryfran Johnson, Editor in Chief, Computerworld Panelists: Joe Puglisi, CIO, EMCOR; Stephen Monn, CIO, TAC Worldwide; Frank Enfanto, Vice President, Operations Delivery & Information Security, Blue Cross Blue Shield of Massachusetts; Alejandro Lopez, System Architect, University of California Davis Medical Center
Noon	Program Concludes

Selected speakers include:

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Editor in Chief,
Computerworld

Steve Goldman
Director, Network Architecture,
Chicago Mercantile Exchange

Alejandro Lopez
System Architect,
University of California Davis Medical Center

Steve Adolph
CTO, Enterprise Solutions Group,
CIENA

Matt Eastwood
Research Director,
Global Enterprise Server Solutions,
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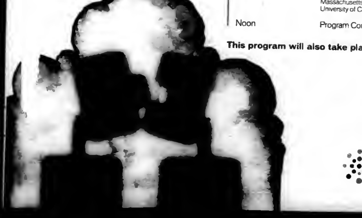

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MARYFRAN JOHNSON

Stone Soup Season

THE WORD *summertime* used to have such a relaxing sound to it, conjuring up images of sunshine, seashores and a slower pace to everything. But for IT executives — especially those at companies with fiscal years beginning Oct. 1 — high summer has come to mean high-anxiety budget time.

I think of it as stone soup season.

Remember the old fable about stone soup? It's the story of a wandering peddler who arrives in a starving village with nothing but a stone in his pocket and a hopeful plan. (Picture a CIO at budget time, dressed down for casual Friday.) By investing the stone (IT) with magical powers, he coaxes the suspicious villagers (business execs) into contributing enough meat and vegetables to the soup pot so that a delicious meal (market success and profits) is ultimately created.

Inspiring, isn't it? The moral is that the greater good is served when everyone contributes a little something. But as IT heads into its fourth budget year since the dot-com crash, the soup still looks mighty thin. Nobody believes the stone has much magic left. Even at the world's richest and most powerful software company, Microsoft CEO Steve Ballmer just warned employees about his plan to slice $1 billion in expenses to "avoid severe measures later."

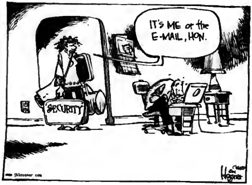
Also last week, a half-dozen software vendors warned about faltering revenues as a result of IT spending slowdowns ("Purchasing Delays Cause Software Sales Shortfalls," QuickLink 48066). Anticipated orders never materialized for companies such as PeopleSoft, Computer Associates, BMC Software, Veritas Software and FileNet. Million-dollar deals shrank to more modest, six-figure sales. All of those upbeat analyst predictions of IT spending growth in 2004 now seem to be talking about some other industry. "I haven't seen any increase in spending on our end," said one network director we quoted. "People are asking more questions about the spending that's going on."

At the federal government level, where the IT spending growth rate has averaged up to 10% annually, the brakes are also being applied. This week in our News section, we report that research firm Datamonitor predicts that growth in federal IT spending will drop to 4% annually over the next five years.

Another area of much-anticipated spending has been in regulatory compliance, as companies fall in line with Sarbanes-Oxley financial reporting rules and other laws governing data security and customer privacy protection. But another News story reports that compliance activities are actually slowing down new systems installations in the fourth quarter rather than adding to the pot.

Stone soup season seems to bring about happier endings in places where more sophisticated IT governance practices have united IT and the business in budget planning and goal-setting. In a special News report last week ("IT Governance Is on the Hot Seat," QuickLink 48025), we examined companies such as Allstate Insurance, State Street and Wyeth, where high-level steering committees are making a difference. Unfortunately, this trend is growing slowly, and surveys indicate that most businesses like the governance idea but find the work required unappetizing.

Despite some rosy analyst predictions and high hopes from industry players, I think stone soup will still be on the menu for 2005. I wooder if we'll ever get used to the taste of it. **🔾 48179**


IT'S ME or the E-MAIL, HON.
SECURITY

PIMM FOX

Hang Up On Congress

THE GOVERNMENT ought to get out of the telecommunications business.

As far as I can tell, the U.S. government has botched every initiative to regulate, deregulate and legislate how telephone calls ought to be made. Sure, it makes sense that everyone should have a phone. But I don't think it's the government's business to levy universal service fees on voice-over-IP providers as part of its decades-old campaign to ensure that low-income and rural Americans have analog phone service.

But that's exactly what will happen if a bill introduced in Congress earlier this month to regulate Internet phone providers becomes law.

VoIP calls are gaining in popularity as companies such as Skype Technologies SA in Luxembourg offer free downloads of their telephony software.

The move by Congress would make the VoIP sector adhere to a host of rules on privacy, billing and fraud. That just doesn't make sense.

VoIP calls are basically free, so there's no billing.

The Skype service is encrypted and uses public/private-key security features, so making a VoIP call carries the same level of risk as using encrypted e-mail programs.

And as for fraud — well, when Congress can't stop spam from hitting the Internet, it's a little disingenuous for lawmakers to say they can protect us from ourselves while we use the Internet to make calls.

Almost 3 million people are using broadband connections to make phone calls, and businesses are getting aggressive in replacing their traditional voice networks with VoIP.

So why would our representatives in Congress regulate a nascent industry that can finally challenge the dominance of traditional carriers? Because they can, and because they're annoyed that some area that they could regulate might slip through their fingers.

Past efforts at regulating the telecommunications arena were supposed to give us lots of choices, lower prices, better service and a vibrant, competitive market. What we have instead are a few regionally dominant players, complicated billing structures, a pricing mess and mediocre technology, particularly in the mobile phone business.

Members of the Subcommittee on Telecommunications and the Internet of the U.S. House of Representatives are already lining up on the issue of regulating the VoIP industry. After all, this is a big election year.

The senior Democrat on the panel, Rep. Ed Markey of Massachusetts, is in favor of regulating VoIP services, and Rep. John Dingell (D-Mich.) attacked the FCC for its February ruling that VoIP wasn't subject to regulations governing telephone calls.

The FBI, the Justice Department and the Treasury are getting into the act. The G-meo want the right to tap your VoIP calls, and the IRS and Treasury are weighing whether a 3% excise tax should be reinterpreted to apply to VoIP services.

You have to hand it to the government. Once it gets a little power, it feels the need to regularly exercise it. But rather than doing all this muscle-flexing, maybe the politicians should install VoIP in government offices that don't need extra-tight security. Imagine the savings!

Oh, but I forgot, it isn't their money anyway. 48040

MICHAEL
GARTENBERG

No Turning Back From Digital Age

I RECENTLY READ a column in which the author lauded the use of paper over digital technology. Paper, he pointed out, was persistent, ubiquitous and never, ever crashed. Digital technology, he argued, was unreliable, so he had replaced his Palm and other digital gadgets with analog versions. In an age when my cell phone needs to be rebooted on occasion and my car recently needed to go back to the dealer to get a software patch to fix some bugs, I found myself in agreement — for all of about two seconds, that is.

Are there problems with the digital lifestyle? Of course there are.

In the years that I used a typewriter, I never lost as much as a word of text to a system crash. However, rearranging even a small amount of text was a major exercise and often led to retyping entire sections, if I did it at all. It was impossible to outline a draft and then integrate it into the body of the text. There was no spell check or thesaurus integrated directly with the written content.

In the end, the benefits of the digital word processor far outweighed whatever inconveniences it may have caused. Today, the typewriter (whose own introduction caused some to lament the supplanting of the handwritten word) is a rare beast to find in everyday use.

Likewise, the venerable spreadsheet has usurped the ledger book, the desktop publishing program the pasteboard, and the presentation program the 35mm slide show. All offered features and benefits that went well beyond the analog versions, and they were adopted in droves.

The problem today is that few vendors are good at explaining the benefits of new digital technology over analog. Why carry a handheld organizer or a Pocket PC if you're only going to use it for your to-do list, making the digital tool nothing more than a high-tech notepad? There are lots of reasons, but if users don't understand them, they will never adopt the technology.

The same communication issues hold true for those of us deploying new technology to others. We need to carefully explain the benefits of digital over analog and show where the technology not only improves the old experience, but also changes it and adds features that wereo't possible before, like the text-rearranging ease offered by the word processor.

The work we do today is no longer accomplished using business-defined technology, where technology assists business functionality. Instead, we're living in an era of technology-defined business, where core functionality is determined by technology innovation.

As recently as 10 years ago, if all the PCs in the world went dark for a day, work would have continued. If all the Internet were unavailable, few would have noticed. All of that has changed. Today, the notion of replacing digital technology with tried-and-true analog systems like paper makes no sense.

Don't get me wrong. I still like paper for lots of things. But for those of you who dislike technology, go back to your quill pens and candles. I'll keep the digital features, even with all of their foibles. 48042

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www.computerworld.com/columns

READERS' LETTERS

Perplexed by Apple's Secretive Nature

APPLE MADE AN EFFORT to get an Xserve to us for evaluation last year. The problem was that our senior manager for server systems, who personally likes Macs, couldn't get Apple to give him the sort of information about the product's future that HP, IBM or Dell would be willing to give him about their products ["Secrecy Eating at Apple," QuickLink 47741].

Apple had no answers to questions about things like expected product life cycles, expected parts availability and service personnel availability. I remember the manager telling the Apple rep that the vendor needed to go swipe some server bigwig from IBM or HP to go in and teach them how to sell into corporate America.

On the other hand, I have some friends who run a company with 26 employees. They got an evaluation Xserve and just love it.

Bill Flusak
Senior network engineer,
Yellow Book USA,
Cedar Rapids, Iowa

I MIGHT BE CONSIDERED a PC/Intel bigot, but after more than 15 years in the industry, I can say that Apple has never been easy to integrate into an existing network.

Some of the problems I've seen include the following:

- Appletalk is too chatty.
- Apple resource forks break when copying/moving files from a Macintosh environment to shared Windows storage.
- Mac users tend to be similar to fly fishermen – egotistical and demanding of the very best hardware. We have Mac users with $2,000 flat-screen monitors because they said they needed them.
- Mac hardware may be cheaper when comparing features to features, but even a 2-GHz Celeron is overkill for the typical office assistant running Microsoft Office.

Because the majority of desktop publishing applications are now available for Windows platforms, I personally no longer see a need to support two types of hardware and operating systems on the corporate desktop.

The financial costs of providing and supporting a LAN/WAN/SAN/NAS infrastructure for Mac and Windows just proves too costly.

James Kunysz
Senior systems engineer,
Loveland, Ohio

TRY REPLACING the search string "OS X" with "VMS" and then replacing "Apple" with "HP," and you'll see that what Mark Hall says about Apple and OS X is even more strongly applicable to HP and OpenVMS (except that HP is secretive only about OpenVMS).

A search for "VMS" on *Computerworld*'s Web site yields only 248 hits, even fewer than for "OS X." It would seem that Apple isn't the only one with a problem with secrecy.

Robert Honoré
Port-of-Spain,
Trinidad and Tobago

MARK HALL'S "Secrecy Eating at Apple" was an interesting column marred by an egregious mistake. In the print version of the column, Hall referred to Apple's "pretentious address" as "1 Infinity Loop." But the actual address is 1 Infinite Loop. The address is a geeky software engineer's joke. An infinite loop is a type of software bug. The address is more self-deprecating than pretentious.

I don't understand why Apple is described as "pretentious" and "haughty" and Microsoft is described as "irksome." It's not germane to the subject.

Jonathan Dodds
Software engineer, Boston

COMPUTERWORLD welcomes comments from its readers. Letters will be edited for brevity and clarity. They should be addressed to Jamie Eckle, letters editor, Computerworld, PO Box 9171, 500 Old Connecticut Path, Framingham, Mass. 01701. Fax: (508) 879-4843. E-mail: letters@computerworld.com. Include an address and phone number for immediate verification.

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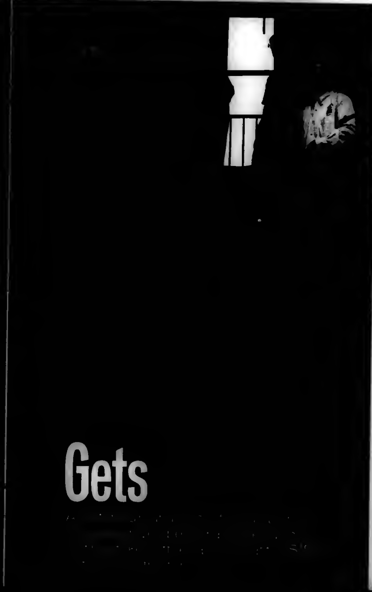

REID HORN

Raytheon's MTrak

Gets

[illegible]

FIELD REPORT

OBJECTIVE Build a system that provides visibility to all materials, such as resistors, capacitors and customized computer chips, from the time of order through receiving, testing, placement in inventory and final use in a Raytheon product. Make the system accessible to every person in the company using only a Web browser.

CHALLENGES Accommodate complex and unique business processes; find a way to easily integrate data from disparate mainframe sources and make it accessible via the Web.

PAYOFF MTrak has become a single source for supply chain data and has eliminated lost and missing parts and other inventory problems. Cost savings: $8.6 million to date; $26 million projected over four years.

IN THE LATE 1990s, Raytheon Co.'s Network Centric Systems (NCS) business unit in North Texas migrated to a new mainframe system that didn't include a materials tracking program. The result was pure bedlam.

"A lot of stuff got lost, and we had no way to find it other than to go and look for it, and that could be a 15-minute or a 15-day process," says Vince Hrenak, vice president of supply chain at Raytheon. "We used to have multiple people sitting by the phones to take the calls asking where parts were."

NCS formed a cross-functional team to search for a remedy. It evaluated at least a half-dozen software packages as well as proposals solicited from commercial systems integrators before ultimately deciding to develop its own system. McKinney, Texas-based NCS had "a lot of specific business rules wrapped around custom processes," explains Rob Vettor, senior business technologist and chief architect of the new MTrak system.

"What we wanted to gain was the advantage of avoiding software costs plus having a customized solution to our unique business problems," says Gene Feighny, MTrak's lead software engineer.

Now, a little more than two and a half years later, what began as a pilot project at NCS has blossomed into an enterprisewide supply chain application that supports 13 Raytheon sites and serves more than 20,000 users. And with cost savings directly attributed to MTrak totaling $8.6 million, other Raytheon sites are lining up to get MTrak. MTrak will eventually be deployed to 45,000 employees and is expected to cut costs by another $17 million. The $18 billion defense contractor projects total savings of $26 million over four years. "This is a rare victory, in my experience," says Hrenak.

Unlocking the Data

From the start, MTrak's developers had ambitious goals: Build a system that would provide visibility to all materials such as resistors, capacitors and customized computer chips from the time of order through receiving, testing, placement in inventory and final use in a military field radio, handheld motion sensor or some other Raytheon product. The system also had to be accessible

THE PAPER AND INK USED IN THE ORIGINAL PUBLICATION MAY AFFECT THE QUALITY OF THE MICROFORM EDITION

Raytheon's MTrak Rollout

SUMMER 2001: Raytheon's $3 billion Network Centric Systems unit contracts its internal IT group to build MTrak 1.0, a Web based materials management application

JULY 2002: Release 1.0 deployed to 6,000 users at NCS sites in North Texas. All incoming packages of materials are scanned using bar code scanners and information is entered into MTrak database which is accessible to all users via the Web

2002

JANUARY 2003, RELEASE 1.5: MTrak enhanced to include mainframe data via WRQ's Verastream middleware menus and security improved

MAY 2003: Release 2.0 debuts. Enhancements include customized reporting and integrated material-quality tracking. Raytheon's Space and Airborne Systems unit in California deploys MTrak

OCTOBER 2003: Florida sites add MTrak. St. Petersburg unit pilot tests wireless RFID scanners with MTrak. In future releases, wireless will be available companywide

2004

JUNE 2004: Raytheon's Missile Systems unit in Tucson, Ariz., deploys MTrak to 10,000 users, bringing total deployment to 20,000 users in 13 sites

[illegible] Six Sigma principles and [illegible] developed by the Newtown [illegible] Project Management [illegible]

[illegible] team developed MTrak [illegible] and subsequent versions [illegible] process that [illegible] every step.

[illegible] prototypes and working [illegible] says. "When we had a [illegible]

Building the Services

[illegible]

Running MTrak

[illegible] manufacturing. That process includes recording data about the package, its contents, who handled it, who scanned it and the time and date. That information is uploaded about every 10 to 15 minutes from the scanners and bar code units to two mirrored database servers running SQL Server 2000. Data from wireless scanners is immediately fed into the database.

At high-volume sites, someone does a scan every four seconds and a search every 5? seconds on average. In addition to package-tracking data, users can access financial and other supply chain data from Raytheon mainframes using the same Web-based desktop, thanks to the WRQ tool and the XML-based Web services that the team built.

Whenever [illegible] interface [illegible] MTrak [illegible]

[illegible] MTrak [illegible] is very precise visibility, which is critical, especially when delivering to the military, says Wholey. "We might have a specific product like a high-end microwave assembly that is being shipped to Afghanistan or Iraq. We need to respond to them so they know when they can expect parts for a system that has failed in the field," he says. "We have people waiting for products and spare parts that their lives depend on."

Next Step: SAP

As usage of MTrak continues to grow, company officials envision it as an ideal, user-friendly bridge to SAP AG's enterprise resource planning software, which Raytheon plans to deploy worldwide beginning in 2006.

"Going forward, we envision MTrak as a way to standardize data across business units and throughout the entire company. We have this common system to grow, and it will ease our transition to SAP," says [illegible]

[illegible] SAP's [illegible]

[illegible] "We don't [illegible]," says Mark W[illegible] of supply [illegible] logistics. Before MTrak, [illegible] part of my job used to be having other managers call me and tell me, 'You lost this or that.' It's been a year now since anyone has called me to say they can't find material." 47731

MTrak
2001
2003

to every person in the company via a Web browser. "It was something we were missing and something in which we saw great value," says Feighny.

The team released Version 1.0 after little more than a year. It enabled workers to use bar code scanners to collect data from incoming packages and to create an electronic record of every movement a package made after its arrival at the loading dock. This information was accessible to all employees via the Web.

Next came one of the team's biggest challenges. Much of the additional supply chain data, including quality, testing and financial information that it wanted to present to users at their desktops, was locked away in mainframe applications.

The team first attempted to build a screen-scraping application that would pull out necessary mainframe data when triggered by a Web-based user who entered a purchase order or part number. But the behind-the-scenes process took too long and was too complex.

So the team evaluated three packaged middleware applications to do the same job. "We took our ugliest mainframe screens and asked the vendors to return the mainframe data to a Web page," recalls Vettor.

The first vendor gave up after eight days. The second accomplished the task in four days. The third vendor, Seattle-based WRQ Inc., got the job done in half a day. So Raytheon purchased WRQ's Verastream integration software, which uses database-style queries to access mainframe data and then filter it so that only the requested data elements are returned to the Web page. "It makes calling the mainframe look like a SQL call," Vettor says.

Building the Services

Once mainframe data could be accessed and delivered to the Web-based application, the team began building XML-based Web services using Microsoft Corp.'s .Net tools. These were written after what developers describe as an extremely thorough and painstaking review of the business processes surrounding NCS's supply chain.

"From the very beginning, Rob [Vettor] and I were in the plant, walking from drop zone to drop zone, mapping out the process so we could see how it worked to develop the system," says Michele Ellison, an industrial engineer on the development team.

They used Raytheon's integrated process-development system, a structured systems-development methodology based on Six Sigma principles and methods developed by the Newtown Square, Pa.-based Project Management Institute.

A four-member team developed MTrak 1.0 and subsequent versions using a highly iterative process that involved end users at every step.

"We were very careful about always putting out prototypes and working models," Vettor says. "When we had a screen idea, we put it out [to the user community] right away and asked for feedback. I don't think the customer was ever surprised. They were involved in making the decisions, and they got what they wanted."

MTrak's service-oriented architecture works to keep the system costs low because it guarantees reusability by other applications, says Vettor.

Indeed, one of the main advantages of developing the system in-house was that Raytheon avoided all licensing issues and costs, says Larry Thompson, application software manager. The team opted to develop the software using .Net, he says, "because we had a history with Microsoft development tools. It fit our internal skills base better [than J2EE]."

Running MTrak

Today, NCS employees scan information into MTrak from about 300 incoming packages a day, either using a bar code reader or a workstation in one of the warehouse's drop zones. Raytheon sites in Florida are piloting wireless radio frequency identification tags and scanners, which will provide real-time access to MTrak data. The devices will be deployed companywide by early 2005. A package is scanned each time it makes a stop — for inspection or testing, placement in inventory, or removal from inventory for use by manufacturing. That process includes recording data about the package, its contents, who handled it, who scanned it and the time and date. That information is uploaded about every 10 to 15 minutes from the scanners and barcode units to two mirrored database servers running SQL Server 2000. Data from wireless scanners is immediately fed into the database.

At high-volume sites, someone does a scan every four seconds and a search every 52 seconds, on average. In addition to package-tracking data, users can access financial and other supply chain data from Raytheon mainframes using the same Web-based desktop, thanks to the WRQ tool and the XML-based Web services that the team built.

"Whenever we created an interface to any other system, such as a warehouse automation system, as a key feed to MTrak, we wanted to build it as a Web service so any other application could use it," explains Feighny. "These are kept on a UDDI server, and any developer within Raytheon will have accessibility to that. In the long run, it will save the company money from a development standpoint because we have one service that can be used by any application — not just MTrak."

In the past month, the system recorded 32,000 scans at NCS alone. "This ability to trace materials means we're better able to control our inventories, and that's a very clear savings," notes Hrenak.

On a broader scale, the visibility MTrak provides to Raytheon users enables the company to offer its customers "a higher level of confidence and commitment," says Tim Wholey, vice president of enterprise supply chain management.

"MTrak allows us very precise visibility, which is critical," especially when delivering to the military, says Wholey. "We might have a specific product like a high-end microwave assembly that is being shipped to Afghanistan or Iraq. We need to respond to them so they know when they can expect parts for a system that has failed in the field," he says. "We have people waiting for products and spare parts that their lives depend on."

Next Step: SAP

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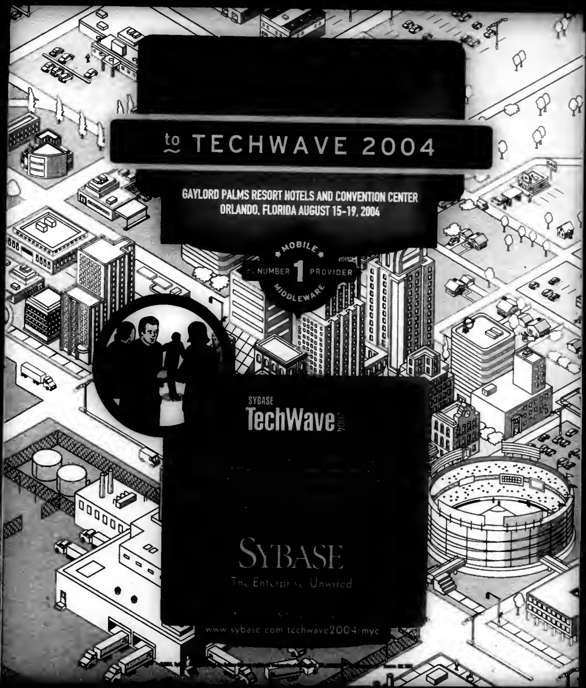
"Going forward, we envision MTrak as a way to standardize data across business units and throughout the entire company. We have this common system to grow, and it will ease our transition to SAP," says Feighny.

"There might also be an opportunity to front-end certain parts of SAP via MTrak," Vettor says. "Sometimes [ERP] software interfaces are rigid, and MTrak could be the way to have a friendly interface going up against SAP."

Raytheon plans to migrate away from DOS- and Windows-based handheld scanning devices in favor of Hewlett-Packard Pocket PCs. In the meantime, there's no question that MTrak has gone above and beyond its initial mission of creating order from chaos.

"We don't lose material anymore," says Mark Ward, manager of supply chain logistics. Before MTrak, he says, "a large part of my job used to be having other managers call me and tell me, 'You lost this or that.' It's been a year now since anyone has called me to say they can't find material." ⊙ 47731



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Standpipe Updates Vertabase Pro

Standpipe Studios LLC in Madison Heights, Mich., has upgraded Vertabase Pro, its Web-based project management application. Version 3.6 includes a video-based learning center that provides usage and project management advice, said Standpipe. Pricing starts at $3,000 per year for five power users under an application service provider model. A one-time network-installed server license costs $5,000.

IPass Bolsters Security Platform

Redwood Shores, Calif.-based IPass Inc. introduced IPass Policy Orchestration, a new software layer built into the IPass connectivity platform. The software helps control and enforce use of policy-based security systems. Policy Orchestration services will be available in the fourth quarter.

Etnus Upgrades Linux Debugger

Etnus LLC in Natick, Mass., has launched TotalView 6.5, the latest version of its code debugger application, which includes fully integrated memory debugging. The new version is available now and starts at $750 for one CPU and one user. It includes support for the Intel Fortran Compiler for Linux Version 8 and other compilers, including PGI C and C++ 5.1 and SUSE Linux Professional 9.

V-Span Launches Video Service

V-Span Inc. in Philadelphia this week announced its Videoconferencing Network Management Services for managing video equipment and networks for videoconferencing. The service includes remote equipment monitoring over a virtual private network and monitoring of video bridges. It's available now and is priced at $75 per device per month.

CURT A. MONASH

The Real Risks

WE LIVE IN AN AGE of terror and often indiscriminate fear. Policymakers and the media alike scream about weapons of mass destruction, lumping together nuclear weapons that can level cities, bioweapons that could exterminate the human race and chemical weapons that are little more than glorified World War I technology.

Pronouncements about information security threats can be equally misleading. Some attacks could destroy your company, but others are no more than a nuisance. So let's step back, consider the classes of security threats and see what kinds of safeguards make sense.

System sabotage, such as viruses, spam and denial-of-service attacks.

Likelihood: Very high.

Harm potential: Often overstated, based on the dubious theory that business interrupted is permanently lost.

Appropriate safeguards: Firewalls, intrusion-protection systems, virtual private networks (VPN), antivirus and antispam software and good security procedures.

Physical security of technical processes, such as hacking the electric power grid or shutting down a steel plant.

Likelihood: Very low.

Harm potential: Very high.

Appropriate safeguards: Keep your process-control systems as isolated as possible from your general network. Stay vigilant about rogue access points on the process-control network.

National security espionage, such as stealing weapon designs.

Likelihood: Low

Harm potential: Huge — people could get killed or you could lose your clearance and go out of business.

Appropriate safeguards: If you're in the government or the defense industry, follow security rules without cutting corners. Also monitor your systems for unusual patterns of data access.

Transactional fraud, such as bogus banking transactions.

Likelihood: Low to moderate.

Harm potential: Enormous in banking, moderate in other cases.

Appropriate safeguards: Protect your core transactional databases with defense-in-depth security. Exploit your database management system's (DBMS) security and auditing features. But don't inconvenience your customers too badly.

Intellectual property theft of things such as product designs or customer lists.

Likelihood: Greatly exaggerated — it's simpler just to hire away workers.

Harm potential: Greatly exaggerated — the courts offer good remedies.

Appropriate safeguards: Basic security. And don't alienate employees.

Internet misuse, such as porn, instant messaging with friends, or illegal or offensive outgoing e-mail.

Likelihood: Very high.

Harm potential: Low, except that people can waste a lot of time online.

Appropriate safeguards: Employee Internet management filters set to monitor, not block.

Customer data exposure, such as stolen credit card numbers.

Likelihood: Low to moderate.

Harm potential: High and somewhat underappreciated.

Appropriate safeguards: Protect your customers' data at least as well as you guard your own. If you have significant customer data in documents floating around your network, get them into a DBMS-based content management system and secure it as tightly as you protect transactional data.

This last category is a tricky one. Loss of private information rarely causes much real harm. On the other hand, laws and regulations mandate data privacy, especially outside the U.S. And any leak of customers' data is a public relations disaster. So, notwithstanding the absence of significant danger, you have to keep your customers' data extremely secure.

Some security threats are overhyped, and some security "solutions" don't solve any genuine problems. But it's definitely necessary for every enterprise to have a solid security infrastructure. The minimum prudent security for most organizations should include the following:

- Firewall/intrusion-protection appliances at every access point, with VPN support and strong network segmentation.
- Effective antivirus and antispam systems.
- DBMS-based security for both transactional and document data.
- Extra rings of protection for critical databases.
- Integrated identity management (a relational or LDAP virtual integrated identity database can suffice).
- Archives and audit trails for all important documents and data.
- Physical access control to security appliances and critical databases.
- Sane password policies. (Smart cards are another good option.)
- Systems and policies for maintaining and verifying general client, server and network system health.

No security strategy is going to be perfect, but you've always got to start with a realistic assessment of the threats your company faces. **48147**

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1 00pm - 5 00pm	Concurrent Analyst Sessions
7 00pm - 9 00pm	Welcome Reception

TUESDAY, SEPTEMBER 28

7 00am - 8 00pm	Registration Open
7 00am - 8 00am	Buffet Breakfast
8 00am - 11 00am	Opening Presentation and General Sessions

Keynote Speaker
Andreas S. Weigend Ph D
former Chief Scientist Amazon.com and Professor Stanford University

11 00am - 12 10pm	Concurrent End User Case Studies
12 15pm - 1 30pm	Networking Luncheon
1 30pm - 5 15pm	General Sessions
5 30pm - 8 30pm	Expo with Dinner

WEDNESDAY, SEPTEMBER 29

7 00am - 6 00pm	Registration Open
7 00am - 8 00am	Breakfast
8 00am - 11 00am	Opening Presentation and General Sessions
11 00am - 12 10pm	Concurrent End User Case Studies
12 15pm - 2 00pm	Expo with Lunch
2 00pm - 5 30pm	General Sessions
6 00pm - 8 00pm	Gala Evening

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- ☐ Manufacturing (non-IT)
- ☐ Automotive
- ☐ Computer, Communications or Peripheral Equipment or Software Manufacturing
- ☐ Agriculture / Forestry / Fisheries
- ☐ Other

Your job title/function:
- ☐ CEO/COO/Chairman/President
- ☐ CIO/CTO
- ☐ VP/SVP/Director
- ☐ IS/IT Director/Manager
- ☐ Other IS/IT Department Manager/Supervisor
- ☐ Corporate/Business Staff
- ☐ Other Corporate/Business Manager
- ☐ Consultant (Internal) or Other

The one item that best describes your involvement in the IT purchase process:
- ☐ Authorize the purchase
- ☐ Approve the budget
- ☐ Initiate the purchase
- ☐ Evaluate / recommend products, brands, vendors
- ☐ Identify / establish the need to purchase
- ☐ All of the above

Number of employees in your entire organization (ALL locations):
- ☐ Over 10,000
- ☐ 5,000 - 9,999
- ☐ 1,000 - 4,999
- ☐ 500 - 999
- ☐ Less than 500

What is the estimated annual revenue of your entire organization?:
- ☐ Over $10 Billion
- ☐ $1 Billion - $9.9 Billion
- ☐ $500 Million - $999 Million
- ☐ $100 Million - $499 Million
- ☐ Less than $100 Million

Your organization's annual IT/IS budget for all IT/IS products:
- ☐ Over $1 Billion
- ☐ $500 Million - $999 Million
- ☐ $100 Million - $499 Million
- ☐ $10 Million - $99 Million
- ☐ $1 Million - $9.9 Million
- ☐ Less than $1 Million

What is your organization's primary vendor for BI/data management solutions?
- ☐ SAS
- ☐ Cognos
- ☐ Business Objects
- ☐ Oracle
- ☐ Hyperion
- ☐ SAP
- ☐ PeopleSoft
- ☐ MicroStrategy
- ☐ Siebel
- ☐ Informatica
- ☐ Microsoft
- ☐ Information Builders
- ☐ Other

What is your organization's most mission critical project within BI/data management this year?
- ☐ Creating the vision and strategy; Analyzing ROI
- ☐ Planning, designing, building the BI infrastructure
- ☐ Building / managing the operational information stores
- ☐ Retrieval and reporting: BI, ERP, CRM, SCM, eCommerce
- ☐ Data visualization, prediction and presentation
- ☐ Managing / enhancing BI applications and infrastructure

IT-End Users, would you like to receive information about playing in the golf outing on Monday, September 27th? ☐ Yes ☐ No

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Protecting THE Data Jewels

There are techniques to keep the list of your best customers from walking out the door. **BY BOB VIOLINO**

MARIA RENDON

IN THE CASINO INDUSTRY, one of the most valuable assets is the dossier that casinos keep on their affluent customers, the high rollers. But last year, casino operator Harrah's Entertainment Inc. filed a lawsuit in Placer County, Calif., Superior Court charging that a former employee had copied the records of up to 450 wealthy customers before leaving the company to work at competitor Thunder Valley Casino in Lincoln, Calif.

The complaint said the employee was seen printing the list — which included names, contact information and credit and account histories — from a Harrah's database. It also alleged that he tried to lure those players to Thunder Valley. The employee denies the charge of stealing Harrah's trade secrets, and the case is still pending, but many similar cases have been filed in the past 20 years, legal experts say.

While savvy companies are using

Business intelligence and CRM systems to identify their most profitable customers, there's a genuine danger of that information falling into the wrong hands. Broader access to those applications and the trend toward employees switching jobs more frequently have made protecting customer lists an even greater priority.

Fortunately, there are managerial, legal and technological steps you can take to help prevent, or at least discourage, departing employees from walking out the door with this vital information.

Legal Steps

For starters, organizations should make sure that certain employees, particularly those with frequent access to customer information, sign nondisclosure, noncompete and nonsolicitation agreements that specifically mention customer lists. Through these documents, employees "acknowledge that they will be introduced to this information and agree not to disclose it on departure from the company," says Suzanne Labrit, a partner at law firm Shutts & Bowen LLP in West Palm Beach, Fla.

Although most states have enacted trade secrets laws, Labrit says they have different attitudes about enforcing these laws with regard to customer lists. "But as a starting point, at least you have this understanding [with employees] that the customer information is being treated as confidential," Labrit says. Then, if an employee leaves to work for a competitor and uses this protected customer data, the employer will more likely be able to take legal action to stop the activity. "If you don't treat it as confidential information internally," she says, "the court will not treat it as confidential information either."

It's also important to educate employees about the confidentiality of customer lists because many people wrongly assume they're public information, says Tim Headley, a partner at the Houston law firm of Gardere Wynne Sewell LLP. "Most people think they can take the lists with them," he says. "You have to show that you've kept it a secret and told employees it's a valuable secret. [Customer lists] are at the core of how you bring revenue into the company. These are the decision-makers who are willing to buy your product."

Headley recommends that managers inform employees about court cases involving stolen customer lists and occasionally warn them that the company will prosecute anyone who steals trade secrets. "Companies should have periodic lunchroom meetings just to remind people" about trade-secret policies, Headley says.

ANY WHICH WAY

Customer lists could leak out in a printout or e-mail message, on a diskette or memory stick, or even in an employee's own memory. Washington state's Supreme Court ruled that a customer list that was memorized by departing employees could be considered a trade secret (Nowogroski v. Rucker, 1999)

If a company suspects that an ex-employee who signed a nondisclosure agreement has given its customer data to a competitor, Labrit recommends taking quick action. That includes obtaining a temporary restraining order to prevent the employee from using the information. The main reason is for the employer to get relief, she says, but the move also sends a message to other employees that the activity won't be tolerated. "If you don't do it, the next time someone gets ready to go, they'll think they can get away with it," Labrit says.

Management Moves

From a management and process standpoint, organizations should try to limit access to customer lists to only employees, such as sales representatives, who need the information to do their jobs. "If you make it broadly available to employees, then it's not considered confidential," says Labrit.

Physical security should also be considered, Labrit says. Visitors such as vendors shouldn't be permitted to roam free in the hallways or into conference rooms. And security policies, such as a requirement that all computer systems have strong password protection, should be strictly enforced.

Companies should instantly shut down access to computers and networks when employees leave, whether the reason is a layoff or a move to a new job. At the exit interview, the employee should be reminded of any signed agreements and corporate policies regarding customer lists and other confidential information. Employees should be told to turn over anything, including data, that belongs to the company.

In addition, employers should track the activities of employees who've given notice but will be around for a few weeks. This includes monitoring systems to see if the employee is e-mailing company-owned documents outside the company.

Some organizations rely on technology to help prevent the loss of customer lists and other critical data. Inflow Inc., a Denver-based provider of managed Web hosting services, uses a product from Opsware Inc. in Sunnyvale, Calif., that lets managers control access to specific systems, such as databases, from a central location.

The company also uses an e-mail-scanning service that allows it to analyze messages that it suspects might contain proprietary files, says Lenny Monsour, general manager of application hosting and management. Inflow combines the use of this technology with practices such as monitoring employees who have access to data considered vital to the company.

A major financial services provider is using a firewall from San Francisco-based Vontu Inc. that monitors outbound e-mail, Webmail, Web posts and instant messages to ensure that no confidential data leaves the company. The software includes search algorithms and can be customized to automatically detect specific types of data such as lists on a spreadsheet or even something as granular as a customer's Social Security number. The firm began using the product after it went through layoffs in 2000 and 2001.

GRAY AREAS

Customer lists are a hotly contested area of trade-secret law, in part because emotions run high when an employee leaves to start a competing business and tries to steal the ex-employer's customers.

But that's not necessarily illegal, legal experts say, because customer lists aren't automatically considered a trade secret. Courts generally look at the following factors in determining whether a customer list is a trade secret:

- **Is it really secret? It's not a trade secret unless you've taken reasonable steps to keep it secret, such as marking it "confidential" and keeping it in a locked facility or in a password-protected computer system with access controlled on a need-to-know basis.**
- **Is it really valuable? It's not a trade secret if you can easily collect the information from the telephone book or publicly available sources. The more effort or money the owner spends to develop the information – and the more that information provides a competitive advantage – the more likely it will be considered a trade secret.**

So, a report identifying the company's most profitable customers – extracted from a well-secured CRM system and marked "confidential" – has a good chance of qualifying as a trade secret, legal experts say.

– Mitch Betts

"Losing customer information was a primary concern of ours," says the firm's chief information security officer, who asked to not be identified. "We were concerned about people leaving and sending e-mail to their home accounts." In fact, he says, before using the firewall, the company had trouble with departing employees taking intellectual property and using it in their new jobs at rival firms, which sometimes led to lawsuits.

Beyond its desire to protect competitive information, the financial services firm is bound by federal regulations to safeguard the integrity of certain types of information. "We're constantly [looking] for things that could be violating laws," the executive says. Still, he says, the firewall isn't a cure-all. The firm also uses noncompete and nondisclosure agreements as deterrents to stealing information.

Rising Risk

Vijay Sonty, chief technology officer at advertising firm Foote Cone & Belding Worldwide in New York, says losing customer information to competitors is a growing concern, particularly in industries where companies go after many of the same clients.

"We have a lot of account executives who are very close to the clients and have access to client lists," Sonty says. "If an account executive leaves to join a competitor, he can take all this confidential information." The widespread sharing of corporate data, such as customer contact information, has made it easier for people to do their jobs, but it has also increased the risk of losing confidential data, Sonty says.

He says the firm, which mandates that some employees sign noncompete agreements, is looking into policies and guidelines regarding the proper use of customer information, as well as audit trails to see who's accessing customer lists. "I think it makes good business sense to take precautions and steps to prevent this from happening," Sonty says. "We could lose a lot of money if key people leave." **47821**

Violino is a freelance writer in Massapequa Park, N.Y. Contact him at bviolino@optonline.net.

SECURING BUSINESS INTELLIGENCE

Today's business intelligence tools are raising the risk of exposing private information

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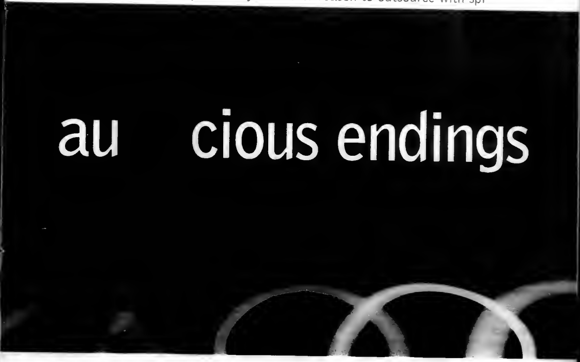

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BARBARA GOMOLSKI

The Sickly IT Recovery

HERE'S AN ALL-TOO-FAMILIAR scenario: The CIO, who cut 10% of the annual IT budget last year, meets with the CFO and the CEO to do early budget planning. The executives look at the current IT budget and announce that further IT cuts may be in order. "Based on what?" the CIO dares to ask. Based on an arbitrary feeling on the part of the other top executives that further reducing IT spending will have no negative impact on the company.

Welcome to the IT recovery. In case you hadn't noticed, this so-called IT recovery looks a lot like the IT recession of the past few years. How can that be? The stock market is improving, corporate earnings are up, and jobs are being created. After two years of technology cutbacks, shouldn't IT be in the money?

Make no mistake; things are better than they were just six months ago in the IT sector. The pickup in the technology industry is evidenced in the improved performance of stalwarts like Intel, Oracle and HP. (It's still a tough road for smaller players, as organizations seem increasingly uninterested in dealing with more than a short list of key suppliers.)

Indeed, many IT executives will actually see incremental (3% to 5%) increases in their budgets in the next year. However, the IT hangover that many firms experienced earlier this decade has left a lasting impression on those who control the IT purse strings. The result: IT executives are not going to get enough money to purchase all the much-needed infrastructure upgrades or to make all the desired application investments. Instead, tight-fisted top executives will continue to watch every dollar, and justifying an IT investment will feel like rolling a large rock uphill.

I'm troubled by what appears to be a growing drumbeat among non-IT executives that keeping IT investments at bay won't hurt the organization. (These are the same execs, by the way, who were dumping heaps of money into e-businesses a few years ago, throwing caution to the wind.)

What can we do about this? A few things would help:

■ We need to face this IT credibility gap head-on. Instead of continuing to plug away and hope that the business sees how IT contributes, we need to talk about the value contribution of IT on a regular basis. This means having a structured set of operational and business metrics that everyone agrees capture the essence of IT value.

■ We need to recognize that, to a large extent, the day-to-day operations of IT have become a utility. Stop looking to these areas as a means to justify further IT investment. Ensure that your IT organization is a high-quality, low-cost utility provider, either through insourcing or outsourcing. Focus the bulk of your energies on the areas where IT can have the most impact on the business: applications and innovation.

■ We need some innovation in the industry. We need the next big thing — the must-have technology that will once again bring great enthusiasm for IT. There's not much that consumers of IT or businesses can do to propel this. As IT leaders, we must keep providing vendors with the feedback they need to make innovative products and services. Also, keep IT innovation alive in your own organization, because many IT innovations are born in unlikely places.

As for the future of IT, those who say it's just a utility may be underestimating the power of IT innovations to disrupt the way we live and work. Maybe I'm optimistic because I'm old enough to remember working in a world where there was no World Wide Web and where most people actually looked things up in big books instead of on the Internet. Maybe that's why I don't believe we'll really get out of the IT slump until the industry delivers the next wave of innovation.

But I have confidence that the innovators of the IT industry aren't going to sit back and say, "Well, we've conquered business with IT; shall we go pursue a career in biotech?" I believe that IT innovations will come along — innovations that we can't even imagine. **47798**

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You Go First

Many CIOs like to stay a version or two behind their vendor's latest e-mail offering, waiting until the ROI for an upgrade is clear. **PAGE 40**

Suite Dilemmas

Big companies like the simplicity and integration of collaboration suites. At Minnesota Life Insurance, CIO Jean Delaney Nelson (left) says standardizing on Notes improved the quality of communications. **PAGE 36**

OPINION

The End of E-mail

Can't live without e-mail? Columnist Mark Hall thinks you can — and will — in the near future, when it becomes more trouble than it's worth. **PAGE 44**

IT managers face choices about collaboration suites and when to upgrade e-mail systems.

SUITES
HOSTING
UPGRADES

Big Decisions

EDITOR'S NOTE

SPECIAL REPORT

IT WAS AN EXCITING TIME when I got my MCI Mail account more than 10 years ago. But today, provocative headlines say that e-mail is dead or dying thanks to the dual curses of viruses and spam [QuickLink 44143]. They've certainly caused big productivity hits and made e-mail a lot less fun. My colleague Mark Hall cleverly makes that case, too (see page 44).

But there's another school of thought that says e-mail is a mission-critical business tool — one so vital that big businesses will hardly even consider outsourcing their e-mail systems because they couldn't bear losing control (see page 38). Looked at this way, e-mail isn't dying at all, despite the annoyances. In disaster recovery situations, some users say e-mail is the first system they want restored! And the 20% of e-mail that isn't spam can be darn important — just ask an IT administrator dealing with false positives caught in the spam filter.

I suspect the future lies somewhere in the middle. E-mail's role is receding into the background; it's becoming just another element of broader collaboration suites, alongside instant messaging and Web conferencing. Eventually e-mail will show up in a desktop "activity center," mixed in with digital voice mail, chat, documents and collaboration screens, all organized by whatever project you're working on. And Google-like search engines will mine e-mail archives, where a lot of institutional memory resides.

In that case, e-mail will be a still-vital yet unexciting ingredient in the electronic soup.
Q 47961

Mitch Betts is Computerworld's *Features editor. Contact him at mitch_betts@computerworld.com.*

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WILLIAM WEBER

Suite Dilemmas

Many big companies like the simplicity and integration of collaboration suites, though they get some less-than-ideal components. By Bob Violino

MESSAGING SOFTWARE has become so critical that it's hard to imagine businesses functioning without it. Online collaboration products have also become vital. The question is, should you buy a messaging/collaboration suite from one vendor or purchase individual products for e-mail and collaboration from several?

There are pros and cons to both strategies, industry analysts and IT managers say. But more organizations seem to be choosing the suite option. For most software implementations, there's typically a 50-50 split between companies that buy best-of-breed applications and those that purchase all-in-one suites. But for messaging and collaboration applications, it's more like 70% to 80% favoring suites, says Nate Root, an analyst at Forrester Research Inc.

The suite preference can be largely attributed to the market's growth. The biggest players, IBM and Microsoft Corp., now account for about two-thirds of product sales, and customers feel comfortable enough with the vendors and their products to fork over what can amount to hundreds of thousands of dollars.

Another big selling point is that everything is already integrated. Individual products might not work well together and often need custom coding for integration. "Some of the most important features today are identity management, corporate directories and security policies," Root says. "It's becoming increasingly important that you get those services from a central platform, where everything is woven for you." Such a platform can help ensure that only authorized users have access to applications such as e-mail and instant messaging.

Minnesota Life Insurance Co. had been operating a dual environment of Lotus Notes and Microsoft Exchange until about four years ago, when the St. Paul-based company decided to standardize on Notes for e-mail and collaboration, says Jean Delaney Nelson, vice president and CIO.

But the transition from Exchange wasn't without hardships, she says. Many employees had grown accustomed to using one system or the other, and some Exchange users were hesitant to make the switch, says Nelson.

"We couldn't build a consensus [among end users] on which way to go, so we had some resistance," she says.

A Way to Simplify

One of the biggest deciding factors for Minnesota Life was the need to make e-mail records retention easier, a concern related to compliance with regulations such as the Health Insurance Portability and Accountability Act. There are just three major vendors that work well with more than one e-mail system, but a company standardizing on one platform has many more vendor choices. And archiving from two platforms also has the potential to drive up overall costs, says Nelson.

Minnesota Life also needed a standardized messaging system that could improve the quality of communications. Prior to the switch, different divisions used different e-mail systems. "There wasn't always a clean exchange of messages," she says. "Now we're all on the same platform, and we can ensure that messages are going through in an understandable format."

It's now easier to collaborate on business projects by sharing information on databases, Nelson adds. "We use [the software] extensively for projects and collaborative purchases," she says. Before the switch, the insurer couldn't use its e-mail systems to share information in cross-division projects such as product development and product-line acquisitions from other companies.

Minnesota Life has also found the

Product Roundup

Here's a look at the messaging/collaboration software packages from leading vendors, based on product evaluations by Forrester Research Inc. in March 2004:

- **IBM Lotus Notes and Domino 6.5.1.** The latest Lotus collaboration platform provides integrated groupware, Web conferencing, instant messaging and document management. The software also includes IBM Lotus Team Workplace, which provides both Web and Notes interfaces to specialized team collaboration databases that support document sharing, threaded discussions and workflow. IBM Lotus Domino Document Management supports more advanced features such as check-in/checkout and version control. The minimum license cost for a single-CPU deployment supporting 10 users is $6,224, including a per-user variable cost of $276. The cost for 1,000 users and 10 CPUs is $300,000.

- **Microsoft Corp.'s Windows Server System and Office System 2003.** Major components include Exchange Server 2003 for enterprise e-mail, scheduling and task management; Live Communications Server 2003 and Windows Messenger for enterprise instant messaging; Microsoft Office Live Meeting for Web conferencing, application sharing and chat; and Microsoft Office SharePoint Portal Server 2003 for community-based collaboration, document management and sharing, and threaded discussions. Client Outlook provides an online and off-line interface to e-mail, scheduling and tasks. The minimum license cost is $28,350 for a single-server architecture supporting 10 users for one year. Deployment on fault-tolerant servers for 100 users costs more than $100,000.

- **Novell's GroupWise 6.5.** Provides e-mail and scheduling capabilities, including sophisticated message filtering and online access and an instant messaging component called Novell GroupWise Messenger. Other components include basic document management from within the e-mail and scheduling client; community collaboration capabilities, and Novell Virtual Office, which provides browser-based collaboration tools such as document sharing, threaded discussions and delegated administration. A client notification program called GroupWise Notify monitors incoming e-mail and calendar events. The product costs $121,127, including a single-user license of GroupWise 6.5, one Novell eDirectory 8.7.3 user license, one Novell exteNd Enterprise Suite CPU license and five user licenses of Novell NetWare 6.5.

- **Oracle Corp.'s Collaboration Suite Release 2.** Provides basic enterprise e-mail features through a built-in Web interface, Web conferencing, voice and fax integration, and basic groupware features, but not instant messaging. The product lacks an e-mail client, so most customers use Microsoft Outlook as a front end. OCS runs on the Oracle 9i Application Server, which includes the Oracle 9iAS Portal. The portal includes features such as document sharing, delegated administration and polling. Oracle Web Conferencing integrates with Collaboration Suite to provide Web conferencing capabilities, including application sharing, whiteboarding, presentation multicasting, polling and integrated chat. The suite costs $60 per user.

single-platform approach to be more cost-effective. It now relies on just one group for support, rather than a different support staff for each environment. The company, which has 2,600 Notes users, is saving about $1 million a year by standardizing on one e-mail system, Nelson says. Cost reductions stem from support staff savings, decreased downtime and other factors, she says.

Single Point of Contact

About a year and a half ago, Temple University in Philadelphia consolidated all of its e-mail messaging hardware and software, says Timothy O'Rourke, vice president for computer and information services. The university had been operating 11 e-mail systems, including a Unix-based application, Exchange and Novell Inc.'s GroupWise. E-mail systems varied among the schools within the university system and administrative offices.

When O'Rourke took his current position at Temple in September 2002, the university was looking for yet another e-mail system. He says he wanted to invest in a single system that would provide central management of all e-mail, spam filtering, shared calendaring and collaboration for the entire organization.

Temple opted for a messaging platform from Mirapoint Inc. that included all of those components. Among the major benefits is improved reliability, O'Rourke says. "In the past, the biggest complaint was that e-mail was always down or messages were not going through," he says. The new platform has addressed those problems.

Like Minnesota Life, Temple has realized cost savings from more efficient support, including reallocating three full-time support people. Whenever a problem crops up with e-mail or other components, the university now deals with one vendor rather than several.

But there are drawbacks to the suite approach, O'Rourke acknowledges. Some of the functions, such as collaboration and shared calendaring, aren't as robust as they might be with products devoted to those functions. But the vast majority of Temple's 45,000 users need only messaging and simple calendar capabilities, O'Rourke says. The suite "doesn't meet all the needs of everyone," he adds. "It's an outstanding messaging system but needs [work] on the groupware side."

Suites provide adequate components, but not the best ones available, agrees Root. "As with any all-encompassing suite, you pay a lot of money upfront for a lot of very good but not best-of-breed services," he says.

For example, Root says, some of the instant messaging features built into suites don't match stand-alone IM products in performance, especially for messaging outside the enterprise firewall that involves multiple IM clients. "Big suites tend to be very loyal to their own brand and ignore the fact that other companies have different IM software," he says.

Eric Goldfarb, CIO at financial services firm PRG-Schultz International Inc., has used both approaches and sees the advantages of each. At the Atlanta-based financial services firm, which has 3,200 employees, a suite makes more sense because it's more scalable and cost-effective for large organizations. PRG uses Lotus Notes as its standard for messaging and collaboration.

But the multivendor strategy can make more sense for smaller and midsize companies, Goldfarb says. When he was CIO at Global Knowledge Inc., an IT education and training firm with 1,500 employees, the Cary, N.C.-based company used a combination of Exchange for e-mail and products from multiple vendors for functions such as calendaring and document sharing.

"We cobbled together a set of packages to achieve this overall collaborative workspace, and it worked well," Goldfarb says. Because the components were focused on specific tasks, they provided greater functionality than was available from suite products, he says. For example, a document management product from an independent vendor can provide a finer degree of detail for records management than a suite can.

However, Goldfarb adds, the multivendor approach would be more costly for a larger organization.

Root agrees that buying individual applications might be the best option for small and midsize companies. "Smaller companies don't need most of the whiz-bang features of the big platforms," he says. "Many don't use online group scheduling and calendaring, and they're perfectly happy using public instant messaging services and e-mail that's built into Linux or another open-source platform." 47576

SOME COMPANI[illegible]

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WILLIAM RIEGER

Keeping a Tight Grip

The market for hosted e-mail hasn't taken off like the industry expected. Many IT managers say e-mail is simply too business-critical to turn over to an outsourcer. By Todd R. Weiss

YOU MAY BE WONDERING if your company can benefit by outsourcing its messaging. For most organizations, it all comes down to how vital e-mail is to their daily operations.

"We have [news and information] content we pass around the globe," says Aggie Cutrone, senior director of desktop operations and messaging at New York-based magazine publisher Time Inc. "It's all rapid-fire. There are dozens of magazines, all different deadlines and all different product cycles. There are reporters all over the world literally every day."

Cutrone says Time hasn't considered moving e-mail to an outside vendor because it is so crucial to its operations and 14,000 worldwide e-mail account users. To ensure that e-mail is always available, the company continues to operate those critical systems on its own, says Cutrone.

That's not unusual. In fact, customers haven't embraced e-mail outsourcing over the past few years as vendors hoped they would, says Robert Mahowald, an analyst at IDC. Customers tend to outsource their whole collaboration applications, including e-mail as a component, rather than outsourcing e-mail as a standalone application. For some customers, hosted e-mail alone "didn't make sense from a privacy, management and security standpoint," he says.

One indicator of that trend is the declining number of Microsoft Corp. certified partners offering hosted Exchange e-mail services. In 2000, 30 partners were available, Mahowald says. In 2001, that number dropped to 11, and today it's just seven. The market hasn't taken off because "some large [user] companies have just not trusted the model. It's really a complex process to integrate," Mahowald says.

Controlling What's Critical

Two years ago, when Time moved its e-mail systems from CC:Mail to Exchange 2000 and Outlook, obsolete equipment was replaced and the entire system was revamped. But operations were kept in-house to maintain systems management and control because of e-mail's critical nature, says Cutrone.

She says she's not against outsourcing. In fact, Time does outsource some applications. But those decisions are made system by system, Cutrone says. "For us, we'd never even consider [outsourcing e-mail]. It's not that we don't look at outsourcing at all. We do it where it makes sense," she says.

But Hadley Reynolds, an analyst at Delphi Group, says the desire to maintain tight control over e-mail shouldn't automatically rule out outsourcing. "It's not the issue of where the processing gets done physically, it's the whole issue of setting policies," which can also be tightly maintained by an e-mail hosting provider, he says. "It doesn't matter where it is. That's what service-level agreements and outsourcing management agreements are all about. Technical deployment issues are the least of the problem."

David Ferris, an analyst at Ferris Research Inc., says companies that outsource are usually smaller and welcome the chance to offload their complicated, management-intensive e-mail systems. "Larger companies don't want to outsource their e-mail," Ferris says, particularly because the systems are too important to their operations and they don't want to give up direct oversight. Other reasons are technical. Exchange, for example, requires high data rates for off-site mail servers, which increases costs and complexity, he says.

Hosting Through a Bad Patch

One organization that chose outsourcing is the Cystic Fibrosis Foundation in Bethesda, Md., a nonprofit that supports more than 115 cystic fibrosis care centers nationwide. CFF outsourced its e-mail function several years ago because the organization's internal IT department was "in shambles," says CIO Greg August.

CFF has about 650 e-mail accounts, but those users are spread throughout approximately 80 offices and some 200 hospitals, making its e-mail infrastructure complicated. August says his predecessors chose to outsource to USinternetworking Inc. in Annapolis, Md., "because of a lack of confidence in the IT staff." But while August says he's been happy with the arrangement with USinternetworking, ongoing improvements in his IT staff and rising costs for outsourcing will likely have him reviewing whether he will renew the contract in about 18 months. "It's served us pretty well," says August. "It's just a completely different landscape now. We're right on the brink of bringing some things back in-house."

For many companies, maintaining control of e-mail with in-house staff is more appealing than turning it over to a vendor, says Mahowald. In a multisite organization with more than 5,000 users, "don't even bother to look at [outsourcing]," he says. "You are going to find that it's going to be more of a headache than it's worth." But, he adds, smaller organizations should "absolutely give it a try." 47582

Top Tier

A sampling of the players in the e-mail outsourcing market.

Apptix
- www.apptix.com
Provides service automation software for the outsourced messaging and desktop services market, including a packaged marketing and sales program.

USA.Net Inc.
- www.usa.net
Provides e-mail and messaging outsourcing for businesses and Web-based messaging services for individuals and businesses.

Equant NV
- www.equant.com
Provides global data network operations, including LAN-to-LAN interconnections, WAN connectivity, dedicated Internet access, virtual private networks and Web site and application hosting.

USinternetworking Inc.
- www.usi.net
Provides hosted applications via the Internet for e-commerce, customer support, human resources and financial management, and messaging and enterprise applications.

SOURCES: HOOVERS.COM, COMPANY WEB SITES

READY FOR DISASTER

Some companies have backup plans specifically designed to ensure access to their e-mail systems in the event of a disaster

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You Go First

Many CIOs like to stay a version or two behind their vendor's latest e-mail offering, until the ROI for an upgrade is clear. By Sue Hildreth

HOW DO YOU DECIDE that it's time to upgrade your company's e-mail system?

If you're like a very few CIOs, you upgrade every time your vendor releases a new version. Or, conversely, you may hang onto an older version even after the vendor stops supporting it. But more likely, you prefer a balanced approach like that used by Eric Goldfarb, CIO at PRG-Schultz International Inc., a $376 million recovery auditing firm in Atlanta.

Before giving the go-ahead to upgrade his company's e-mail system from Lotus Notes 5.0.3 to 6.5.1, Goldfarb compiled what he calls the "David Letterman Top 10" reasons to upgrade. "I wait until things pile up. Then I look at that pile and ask, 'What's it worth to us?' " he explains. "There's a cost to move [Domino] applications, so I want to make sure I'm going to get a good return on investment. With an incremental upgrade, I'm not going to get a good ROI." That payback, which Goldfarb expects to achieve six months after the upgrade is rolled out, will come in three areas: features that increase productivity among the company's 3,200 users, fixes for software bugs that had burdened his help desk, and administrative improvements in security, storage and archival capabilities.

Goldfarb's view is typical. Many CIOs see an e-mail upgrade as inevitable but not something to rush into. Among Notes users, 75% of organizations were still on some version of IBM's Domino/Notes 5.x as of late 2003, according to estimates from Ferris Research Inc. in San Francisco. And as for users of Microsoft Corp. products, in a Ferris survey of 45 organizations in January, 37% of the respondents said they were using Exchange Server 5.5, while 63% had Exchange 2000 and just 35% had Exchange 2003. (Multiple responses were allowed because large companies often have mixed environments.)

"For the last couple of upgrades of Microsoft and Lotus, there've been many customers who've said there's not enough features to justify an upgrade. So now people are moving from Exchange 5.5 to 2003, and a fair amount of Notes people going from 4 to 6," says Ferris analyst David Via. He estimates that a major upgrade, such as from Exchange 5.5 to 2000 or 2003, typically costs $100 to $175 per user, whereas minor upgrades, such as Exchange 2000 to 2003, cost $40 to $90 per user.

One factor that scared some IT managers from upgrading to Exchange 2000 and 2003, says Via, is the need to move to Active Directory, a significant architectural change. Such was the case for the government of Miami-Dade County, Fla., which will be upgrading from Exchange 5.5 to 2003 over the next 18 to 24 months. The need to convert 50 departments and 15,000 e-mail users to Active Directory added months to the timeline, says Chief Technology Officer Ruben Lopez.

ANATOMY OF AN UPGRADE

It took three years to upgrade the 5,000-user e-mail system at Aventis Pharmaceuticals. Here's an in-depth case study

QuickLink 37266
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Another factor that has delayed some upgrades is the economy, says Shruti Yadav, an analyst at Nucleus Research Inc. in Wellesley, Mass. "E-mail upgrades have had to compete with other IT projects," she says.

The Well-Traveled Path

But waiting too long to upgrade can increase the cost and complexity of the project. "The longer you wait, the more work you wind up having to do. You may find that the messaging piece is out of date, and the network infrastructure is out of date," says Sara Radicati, CEO of The Radicati Group Inc., a market research firm in Palo Alto, Calif.

The Upgrade Budget

Here's a breakdown of the typical costs of a major e-mail system upgrade.

Hardware and software costs	47.5%
Implementation	28.3%
User disruptions	11.6%
Design	5.5%
Travel and expenses	2.4%
Testing	1.6%
Training	1.0%
Evaluation	0.9%
[illegible]	0.5%

SOURCE: COST MODEL FROM FERRIS RESEARCH INC., SAN FRANCISCO, DECEMBER 2003
(PERCENTAGES DON'T ADD UP TO 100 BECAUSE OF ROUNDING.)

Lee Lovig, who was chief IT architect at a 5,000-user financial services firm in the Midwest until last month, says his former company's upgrade to Lotus Notes 6.5 — required because of a merger — was difficult because over half of the end users were still on Notes 4.5. "We waited too long," says Lovig, who's now an independent consultant in Grimes, Iowa. "There's a lot more bells and whistles in 6.5. The client is tremendously different, and we [were] spending a lot of time and money on training."

On the other hand, you don't want to rush to implement the latest release and find yourself the unwitting beta tester of the vendor's newest technology. Ideally, you should wait until you can identify obvious benefits from making the switch. The benefits might be new features that increase user productivity, reduce IT administrative hassles or improve business operations such as customer sales and service in the field.

That desire to achieve ROI without taking unnecessary risks is why Goldfarb prefers to stay in the middle of an application's product cycle — not ancient, but not bleeding-edge, either. "I ride the middle of the curve, not in the front of it," he says. Robert Ashby, support manager at Miami-Dade County, has the same sentiment: "It's not that I want to stay back, it's just I'd rather see everyone else upgrade first."

Alan Boehme, CTO at Best Software Inc. in Irvine, Calif., and formerly CTO at GE Power Systems, also advocates a middle-of-the-pack position. Boehme says Best is upgrading from Exchange 5.5 to 2003 but expects to stick with 2003 for at least three years, "until we see what happens with Longhorn [the code name of the next version of Windows]."

In his view, there's rarely a competitive need to maintain a leading edge in e-mail technology. "Companies tend to overspend on e-mail," asserts Boehme. "Instead, think of e-mail on a 1-5 scale, with 5 being the best e-mail system in the world. Then ask yourself if you really need to be a 5. I think most organizations can get by being a 3." 47380

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8:00am – 12:15pm	General Conference Sessions
12:15pm – 1:30pm	Luncheon Sessions
1:30pm – 5:30pm	General Conference Sessions
1:30pm – 5:30pm	Concurrent Developer Tracks
3:45pm – 5:15pm	End User Case Study and Analyst Tracks
5:30pm – 8:30pm	Expo with Dinner

TUESDAY, SEPTEMBER 14

7:00am – 8:00am	Breakfast
8:00am – Noon	General Conference Sessions
Noon – 1:30pm	Expo with Lunch
1:30pm – 5:00pm	General Conference Sessions
1:30pm – 5:00pm	Concurrent Developer Tracks
4:00pm – 5:00pm	End User Case Study Track
6:00pm – 8:00pm	Gala Evening

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☐ Government/Military
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  ☐ IT Network Management
  ☐ IT Storage Management
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☐ Approve the budget
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Employees in your entire organization (all locations):
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☐ 1,000 – 4,999
☐ 500 – 999
☐ 100 – 499
☐ Less than 100

What is the estimated annual revenue of your entire organization?
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Collaboration Software

BY RUSSELL KAY

DEFINITION

Collaboration software, also called groupware, helps integrate work on a single project performed by several concurrent users at separate computers. Collaboration software typically includes tools for communication, conferencing and administrative functions.

IN MANY WAYS, computers make collaboration more awkward than we want. Go into any meeting carrying a piece of paper and, barring language problems, you know that other people in the room can read it, mark it up, pass it around and file it away.

Life isn't nearly so simple with electronic documents. It's considerably harder to mark up a Web page or to use the same filing system for e-mail and other documents — and even if you can do those things, your systems may not work well or be readily accessible to other applications, whether located on your PC or on someone else's.

Even though there are many collaboration and document-sharing applications on the market, it's still true that for the most part, the way we share files is to e-mail them back and forth as attachments. While this has been surprisingly productive for many people, it's a long way from collaboration.

In fact, this isn't significantly different from the "sneakernet" days of hand-carrying floppy disks from one desk to another.

Network Not Enough

Even though networked computers allow high-speed communications and the fast and easy exchange of data and documents, it's still remarkably difficult for a group of users to work together on a project from separate computers. Doing so requires all involved parties to install a variety of programs and utilities on their PCs.

All that started to change back in 1989, when Ray Ozzie at Lotus Development Corp. brought forth Notes, the first program that attempted to integrate a number of communication, scheduling and database-driven activities into a single software package that was designed from the start to live on a network.

QUICK STUDY

In the years since, many other companies have attempted to produce and market collaboration software, using very different models and approaches. But no one has yet reached the goal of seamless, transparent, hassle-free collaboration between groups.

Collaboration can be done formally, from the top down, through established procedures and processes, or it can be done informally, from the bottom up, as communities and project teams collaborate in an ad hoc way.

Some large organizations may be concerned about the proliferation of project-based collaboration software, and they are likely to want a cohesive plan for supporting (i.e., managing and controlling) collaboration across the enterprise.

Collaboration Tool Kit

Collaboration software generally involves several types of tools in three categories:

Electronic communication tools facilitate information sharing by enabling people to send one another messages, files, data or documents. They include the following:

- E-mail
- Instant messaging
- Fax machines
- Voice mail
- Web publishing

Electronic conferencing tools enable a more interactive way of sharing information. The most common forms of electronic conferencing are teleconferences and videoconferences, but new technologies are emerging.

- Data conferencing lets networked PCs share and view a common whiteboard, and each user can add to the board during discussions.
- Electronic meeting systems generally involve conference rooms equipped with large-screen digital projectors linked to multiple PCs.
- Discussion forums and chat rooms facilitate and manage online text messages.

Collaborative management tools simplify the management of group activities.

- Electronic group calendars make it easier to schedule events and meetings with multiple people, and they can automate reminders and alarms for group members.
- Workflow systems help manage tasks and documents.
- Project management systems help schedule, track and chart the steps in a project.
- Knowledge and content management systems make it possible to collect, organize, manage and share information in a variety of formats.

47912

Kay is a Computerworld *contributing writer in Worcester, Mass. You can contact him at russkay@charter.net.*

PUSHBACK

To read more about user resistance to collaboration, visit our Web site.

QuickLink 46102

Where to Shop: For a list of collaboration software vendors, visit

QuickLink 41852
www.computerworld.com

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Roots of Digital Collaboration

The real grandfather of electronic collaboration is computer pioneer Doug Engelbart. In the 1960s, his laboratory at the Stanford Research Institute created the building blocks used in virtually all modern collaboration software: data structures (hypertext), user interfaces (windowing systems) and applications (groupware).

In 1968, Engelbart wired Brooks Hall in San Francisco to demonstrate the computer mouse, hypermedia and on-screen video teleconferencing.

Engelbart believed that because society's problems are scaling at unprecedented rates, solutions need to scale at the same rate if we are to survive. Used properly, computers can help us get collectively smarter. (For more background, go to *www.bootstrap.org* and read Engelbart's 1962 paper, "Augmenting Human Intellect: A Conceptual Framework.")

However, nothing much more happened in collaboration until Lotus Notes was launched in 1989. Notes deployments grew slowly, and in the 1990s, Microsoft and others entered the corporate e-mail market.

In the late 1990s and into the new millennium, Internet e-mail, corporate intranets and a growing interest in knowledge management sparked renewed interest in and development of collaboration software. Today's market includes companies such as Open Text Corp., Intraspect Software Inc., eRoom Technology Inc. (acquired by Documentum Inc.), Groove Networks Inc., WebEx Communications Inc. and Centra Software Inc.

- Russell Kay

The Almanac

An eclectic collection of research and resources. By Mitch Betts

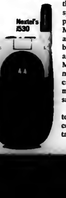
Taking the Politics Out of Migrations

Sometimes top executives decide to change e-mail platforms against the wishes of IT administrators. Or companies with different e-mail systems merge — and one has to go. Sometimes one division wants to switch e-mail vendors and another doesn't. Religious wars between the pro-Microsoft and pro-Lotus factions are common.

The way to depoliticize e-mail migrations is to base the decision more on facts than on emotional outbursts, says Andrew Wolff, vice president at Wellesley, Mass.-based DYS Analytics Inc., which makes software for analyzing e-mail traffic and helps companies with e-mail conversions. Objective metrics about total cost of ownership and performance can help settle disagreements about whether the current system needs to be replaced, he says.

Voice Memos Sent as E-Mail

Nextel Communications Inc. in Reston, Va., recently announced NextMail, an application that allows Nextel subscribers to record voice messages on their mobile phones and send them to any e-mail address.

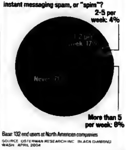

Nextel's i530

Nextel, known for the Direct Connect walkie-talkie feature on its mobile phones, is charging $7.50 per month for the service. The subscriber selects a recipient's e-mail address, presses the talk button, speaks into the phone to record the MP3 voice message and then releases the button, which sends an e-mail with the MP3 link or attachment. The service can also send confirmation that the message was received.

The market? Nextel says it's ideal for construction, real estate, insurance, property management and other industries where field workers normally call into headquarters throughout the day with status reports or work orders.

'Spim' Attacks

How many times per week do you receive instant messaging spam, or "spim"?



Base: 132 end users at North American companies

SOURCE: OSTERMAN RESEARCH INC., BLACK DIAMOND, WASH., APRIL 2004

CRM and E-mail: Headed for Merger?

The combination of CRM, knowledge management, social networking and e-mail technologies is a powerful one at Chicago law firm Much Shelist Freed Denenberg Ament & Rubenstein PC.

The 85-lawyer firm is starting to use InterAction CRM software from Interface Software Inc. in Oak Brook, Ill., which is tightly integrated with Microsoft Corp.'s Outlook. For example, when Outlook users get an e-mail, they can click a "Who's this contact?" button and get a profile of the sender, if he's a contact in the CRM database. Important e-mails and documents are accessible and organized in an activity log, so teams of lawyers working on complex cases can see "who's doing what with whom," says attorney Daniel L. Liutikas.

The knowledge base, which has profiles of clients, referral sources and outside contractors, has become a central hub for managing cases and marketing, he says. The software's social networking technology helps with developing new business, or "rainmaking," because it shows which lawyers have contacts inside potential client companies, Liutikas adds [QuickLink 45456].

Patent Watch

- **E-mail priority alert service.** This system's autodialer calls a designated telephone number when the e-mail server receives a message from a high-priority sender, such as an important client. This would be useful for people who infrequently turn on their computers but need to know about important e-mail messages. Inventors: Qinghong Cao, Liang Jin, Wenzhe Luo and Jian Wu, for Murray Hill, N.J.-based Lucent Technologies Inc. — *U.S Patent No. 6,745,230, issued June 1*
- **Detecting unwanted e-mail properties.** We usually want e-mail delivered rapidly, but this scheme delays suspicious e-mails for a certain period of time so they can be properly tested for viruses and spam before delivery. Inventors: Lee Codel Lawson Tarbotton, Daniel Joseph Wolff and Nicholas Paul Kelly, for Network Associates Technology Inc. in Santa Clara, Calif. — *U.S. Patent No. 6,757,830, issued June 29*

MORE RESOURCES ONLINE

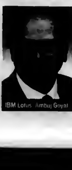
Get the latest news and advice about e-mail topics at our E-Mail/Groupware Knowledge Center

QuickLink a4750
www.computerworld.com

Q&A Three Questions for Ambuj Goyal, General Manager, IBM Lotus Software

Many users are several versions behind the vendor's latest offering. Is that frustrating to you? A huge fraction — I'd estimate 60% to 70% — have migrated from their old mail systems to the new release. So it's not frustrating to me at all. Every customer has a cycle of upgrades . . . and we want to make sure their hardware upgrade cycle is consistent with our software upgrade cycle. So our message to them is to do it at the right time, but do it when you're doing [the hardware upgrade]. For example, if you're doing a server consolidation project, go ahead and do the e-mail project as well. When people move from Notes 5 to Notes 6, we've seen server consolidation requiring as much as 50% less hardware, so there's a significant cost advantage. That's the right time to do it.

The press has run headlines about the death of e-mail because of viruses and spam. What's your view? The news about the demise of e-mail is exaggerated. I don't think the [business] world can survive without e-mail these days. Yes, viruses and spam are hurting the productivity of users. But customers are choosing IBM because we are far more secure and virus-immune than competitors.


IBM Lotus: Ambuj Goyal

Do you foresee any dramatic innovations in e-mail, or is it totally mature? Absolutely, huge innovation is about to come. E-mail is becoming a place where people are starting to manage their activities. So why wouldn't we think in terms of activities first, and e-mail as just one part? We showed at the last Lotusphere something called Activity Explorer, where e-mail, instant messaging and document exchanges are all captured in a single activity, so you can see the complete chain of what has gone on, not just e-mail. It will change the way we think about e-mail. 47947

FACED WITH AN EVER-INCREASING AMOUNT OF INFORMATION
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MARK HALL

The End of E-mail

HAS IT HAPPENED TO YOU? Your phone rings, and a business contact asks whether you received his e-mail. You say no. You check your spam filter, and there it is. Or, you send an important document electronically to a colleague who calls you later and asks you to fax it because his network no longer accepts attachments. For many of us, these time-wasting events are now happening daily.

I won't bother to ask if you've been a victim of a virus, a worm, spyware or some other bit of unsavory code that hitchhiked its way into your PC via your e-mail queue. You have. And why waste my breath asking whether you get more real mail than spam? You don't (see "Dual Curses: Viruses and Spam," QuickLink 44143).

PC-based e-mail is rapidly becoming one of the most unreliable, unsafe and unpleasant modes of communication at our disposal. It won't be long before we abandon it.

Not only is e-mail becoming increasingly irritating to many of us, but it's also becoming more expensive for companies to manage. Much more.

IT departments in large organizations spend millions of dollars annually to manage incoming and outgoing e-mail. Antispam and antivirus appliances and filters aren't cheap, and they generally need ongoing support from subscription services to keep current in the fight against the creeps who persist in attacking our networks [QuickLink 41896].

Companies concerned about the implications of sexual harassment lawsuits and intellectual property losses are investing in pricey message-management technology that inspects the contents of every e-mail. Compliance issues are forcing companies to add sophisticated information life-cycle management tools to their mass storage systems to properly archive e-mail.

In addition to buying the products, you need to train IT staff to deploy and manage them. Of course, you could outsource everything, but that's not cheap, and you never really know how secure it is.

All these headaches, for what? So workers can chew up your corporate bandwidth e-mailing *SpongeBob* movie trailers to their friends?

So-called realists out there will dismiss these lamentations by saying that despite all of its problems, PC e-mail is too popular to be abandoned. Perhaps. But those old enough to remember Usenet know that even a good, useful communications tool can be abandoned once it becomes overrun by hucksters, pornographers and other pond scum floating around the Internet. Usenet is still out there, but its popularity is near zero.

Well, the so-called realists will counter, e-mail is still far too useful for companies to abandon. That's what these same folks said about IBM's Selectric and the floppy disk drive. Technology is abandoned whenever cost-benefit evaluations determine it's no longer worth keeping around. And we're getting mighty close to the day when PC-based e-mail is determined to have a bigger downside than upside.

OK then, the realists will say, what's going to replace e-mail? After all, technology needs to be replaced with another technology. Agreed.

In the case of the Selectric, it took a combination of keyboards, monitors, printers, storage media and, of course, the PC motherboard to supplant those elegant machines. And that's what I predict will happen with PC-based e-mail.

I believe a mix of new tools will emerge around handheld devices like the Palm, the BlackBerry and your smart cell phone. These products are becoming more powerful, making it possible to do more than just send and receive messages. They're adding crisper displays and better input capabilities, whether with bigger onboard keyboards or external ones.

Also, with these devices, there's no underlying monopoly like Windows that sociopathic programmers can write viruses for. Spam isn't a big problem for today's handheld users. And by the time PC e-mail is jettisoned in the next few years, vendor-embraced antispam standards and legal action against spammers will make it a nonissue.

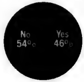
Instant messaging is another technology that could help move PC e-mail into the dustbin of history. It's hard to spoof an IM user because incoming messages by definition come from someone on your whitelist. And tracking and management tools exist to protect your company and employees from intellectual property theft, harassment and dangerous attachments.

Sure, there's no perfect replacement for PC e-mail. But there wasn't one for IBM's Selectric, either. It had the greatest keyboard ever, one the PC industry hasn't come close to replicating in a quarter century. But somehow, we've managed to get by, just as we will when PC e-mail disappears. 47526

SNAPSHOTS

E-Mail Encryption

Does your organization currently have secure messaging capability, in which users can send encrypted messages?



Base: 111 IT professionals at North American companies

SOURCE: OSTERMAN RESEARCH INC., BLACK DIAMOND, WASH., MAY 2004

Spam Breakdown

Offers of cheap software are up, but health-related pitches are still the biggest category of spam.

Health	54.4%
[illegible]	[illegible]
Pornography	5.4%
[illegible]	[illegible]
Gambling	0.4%
[illegible]	[illegible]
Others	10.4%

SOURCE: CLEARSWIFT LTD., SAN RAMON, CALIF., MAY 2004

IM vs. Telephone Calls

What has been the overall impact of instant messaging on your use of the telephone?

Base: 132 end users at North American companies

SOURCE: OSTERMAN RESEARCH, APRIL 2004

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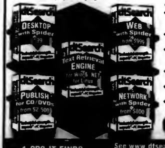
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◆ "Intuitive and mature ... a superb search tool" – PC World
◆ "Blindingly fast" – Computer Forensics: Incident Response Essentials
◆ "A powerful arsenal of search tools" – The New York Times
◆ "Covers all data sources ... powerful Web-based engines" – eWeek
◆ "Searches at blazing speeds" – Computer Reseller News Test Center

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Advertising Supplement

IT Careers: The Feds Want You!

The good news over the past quarter has been a drop in job cuts in the information technology world, and an increase in hiring. Gaining fewer headlines is where a good portion of information technology careers can be found – with the U.S. government.

Postings on the Office of Personnel Management website and usajobs.opm.gov – include more than 5,000 listings for jobs that range from the most senior levels to entry level positions. In addition, there's information on how to get scholarships for studies that will qualify you for the positions.

Three dynamics are driving the hiring by federal agencies. First is the transfer to E-Gov – a management initiative to streamline and automate everything from Social Security and Veterans Affairs to the business enterprise systems that drive the literally hundreds of departments operated by the government.

The second is the transformation of the U.S. intelligence/security/defense operations. Increasingly the security and defense of the country, from natural disasters as well as outside threats, is driven by data gathered by federal agencies.

A third issue is the aging of the government workforce. According to an internal survey conducted by the Federal CIO Council, 76% of the federal IT workforce is over age 40 and less than 5% is younger than 30; most have worked for the government for more than 20 years and plan to retire in the next decade.

"Much of the emphasis on federal IT jobs is hiring new entrants from college," says Bob Cohen, senior vice president of the Information Technology Association of America, which recently completed its 14th annual Federal CIO Survey. The federal government has increased its recruitment efforts at colleges and universities.

Cohen says that in the down cycle of hiring among technology companies, the federal government has become more attractive as an employer. "It's easier to change positions from one federal agency to another," he says. "The job security and predictability of federal employment has become much more appealing to IT professionals."

The ITAA study found that the federal agencies are in need of some fairly specific expertise and experience:

- Certified program managers;
- Information security and authentication;
- Large-scale data management and repository development;
- Enterprise software implementation, and
- Enterprise architecture development.

Cohen says the opportunities aren't second-class offerings. In fact, several federal agencies made the Washingtonian magazine's Annual Great Places to Work list for the metro area: Fannie Mae and Freddie Mac among them. Others making the list that work with or for the government include Booz Allen Hamilton, Number Six Software, FGM (software/systems engineering), SRA International, Terrapin Systems, Acumen Solutions, New Media Strategies, Johns Hopkins University Applied Physics Laboratory, and Mitretek Systems.

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Produced by Carole R. Hedden

Computer Systems Analyst, Wachovia Corp. Los Angeles, CA. Resp. for architectural design and programming of web based reporting solution. Pos reqs BA in Eng or Comp Science and 2 yrs. exp. in pos. or as Programmer Analyst. The 2 yrs of reqd exp must incl. developing financial performance and accounting metrics for securities lending programs, developing reports and application user interface using .Net/Crystal Interop, and Report Builder (or similar), using rational unified process development methodology utilizing unified modeling language and database design tools, programming Nter applications using .NET architecture and integrating financial data into custom financial applications. 40hrs/wk. M-F. Send resume & cvr. letter to Armeet Sandhu, 11440 San Vicente Blvd., 3rd Floor, Los Angeles CA 90049

Oracle Applications Developer: Utilizes knowledge of Oracle 11 and 11i, Sun/Solaris, and Oracle RDBMS 8 to design and develop appropriate technical platforms in support of specific business requirements. Comprehends complex configurations, structure and relationships, performance and scalability. Formulates policies and standards to ensure integration and flexibility (change, emerging technology, etc.) and provides product recommendations. Requires a U.S. or foreign Bachelor's degree in Comp. Sci., Engineering, Comp. Engg., Systems Mgmt., the Hard Sciences or a closely related field and at least 3 yrs. of work exp. in this or a related position, including Consultant, System Developer, Software Engineer, etc. Position is in Webster, NY but may require travel and/or relocation within the U.S. 40 hrs/wk, 8:00 am - 5:00 pm, $79,040/yr. Interested parties should submit resumes to PA Dept. Of Labor & Industry, 235 W. Chelten Ave., Philadelphia, PA 19144. JO# WEB 431477

Sr Software Engineer, Wachovia Corp., Charlotte, NC. Design and develop financial and banking applications using client server and Web technologies using Java, J2EE, JDBC, HTML, javascript, VBScript, ASP, LDAP, C++, COM objects to interface with CICS listener. Reqs. BA and 3 yrs. exp. in pos or as a Software Eng or Developer. The 3 yrs must incl designing and developing web applications using Java J2EE (EJBs, Servlets, JSPs) JDBC, SQL, HTML on UNIX, Solaris and AIX platforms and must have incl installing and tuning application servers, webservers and directory servers (LDAP) and work with stored procedures, functions using ORACLE, SYBASE, shell scripts and PERL scripts on SOLARIS Unix and AIX platforms. M-F 8-5. Send resume to Babette Robbins c/o Amy Kee, Wachovia Corp. 1525 West W.T. Harris Blvd. 3A1, Charlotte, NC 28262. No phone calls.

Universal Business Consulting, Inc has openings in NewJersey and nationwide for computer professionals in the following skills:

Java, JSP, JavaScript, JDBC, Servlets, Corba, EJB, WebLogic, WebSphere, iPlanet, ASP, Visual Basic, COM/DCOM, C, ATG Dynamo, Cold Fusion, Oracle, Developer 2000, PL/SQL, SQL Server, Sybase, Data warehousing, Hyperion Essbase, Hyperion Analyzer, PeopleSoft, SQR, Cognos, Informatica, ABAP/4, Legato Networker, Veritas Cluster Server, Orbix Web Server, Apache, Crystal Reports, TCP/IP, SMTP, LDAP, WinRunner, Load Runner, Sun Solaris, Linux, Win NT, and Unix.

Req: Some positions require a Bach Deg w/at least 2 yrs exp, others Mast Deg or equivalent w/ 2 yrs exp. For Some positions 4 yrs exp is accepted. Only those eligible for permanent positions need apply. Must be willing to relocate if necessary. Salary will depend upon experience. Reply to: hrd@ubcincorp.com

Code SA3: Dev s/w applns w/ Java, VC++, MFC, HTML, ASP, JavaScript, VBScript, PL/SQL, JSP & Servlet in Win NT/95, use RDBM Oracle, Hypersonic, MySQL, MSSQL Server & Sybase-11 appln dev appln/web servers Tomcat, Websphere, Weblogic, JBoss for web-based projs; Case tools Rational rose, Clear Case, Clear Quest for procs & config mgmt. Dev PHIN data models, dev test plans QA procs for sys effcncy. Anlyz info mgmt & data reqs from users. Sys dev d/zn config mgmt QA/QC. Pres cncpts. Use EDI, HL7 in health care imaging integrn. BS in Elec Eng or CS + 2 yrs exp

Code SA: Dev s/w sys w/ VB 6.0, MS Access, VBA, & MS SQL Server. Utilize MS ActiveX, COM &/or COM+ in the dev of s/w sys for outbreak mgmt & public health. Dev plans per specs & d/zn logic to impl comp prgms, IT sys & procs for tech. admin & IM func/ops. Dev test plans, QA procs for sys effecncy. Analyze info mgmt & data reqs from users. Sys dev d/zn config mgmt. QA/QC. Present concepts. BS in Comp Applns + 2 yrs of exp

Comp salary. Apply w/code to BCA, 2002 Perimeter Summit Blvd. #880 Atlanta, GA 30319 w/prf of wk auth.

Bioinformatics Specialist to develop, modify, and implement unique web-based oligo analyses, management systems to allow end users to modify target sequence identification, oligo sequence design and multiplex functions design such as multiplex PCR, multiplex probe and multiplex oligo arrays for adaptation to commercialize data management solutions for microassay data. Develops appropriate assay specific design sequence algorithms to insure proper software development and modification of end users molecular diagnostics purposes. Uses various bioinformatics and database software such as Bioperl, Perl, Java, Shell Script, MySQL, ArrayWoRX, NIS2000, Eclipse, Emacs, Vi and writing of Perl scripts to import XML version of NCBI SNP map information in performance of duties. Requires Bachelor's Degree in Computer Science and one year direct experience. Send resumes only, no calls, to: Ramesh Ramanathan, 4066 Commercial Ave, Northbrook, IL 60062

Sr Sys Analyst to d/zn s/w sys w/ UML/Rational Rose & Object Oriented Method. D/zn /dev/impl s/w appl using mumps, Java, C++, VC++, & J2EE Tech like STRUTS 1.1 Framework, Servlets, JSTL, EJB with Weblogic Appl Server, JBoss Appl Server 3.2.3, Iplanet Appl Server 6.0, Netscape Appl Server 4.0, Weblogic RMI, JNDI, Java Swing, JMS-MQ Series, JNI, RMI, XML, XSLT, HTML, JavaScript, SQL, PL/SQL, Ant 1.6.1, Log4J, Rational Rose, & JBuilder. Gather user req, dev emulation interfaces for legacy sys w/ C++ & stored procs for SQL Server. D/zn D/B tables; Sch timeline for modules & design tasks. Be certified as Appl Developer. BS Electronics or CS + 2 yr exp. Comp salary. Apply to Netserv - Code AS, 6580 Jimmy Carter Blvd., Norcross, GA 30071 with proof of perm w/k authzn.

Seeking qualified applicants for the following positions in Collierville, TN. Senior Programmer Analyst. Formulate/define functional requirements and documentation based on accepted user criteria. Requirements: Bachelor's degree or equivalent" in computer science, engineering, MIS, computer information systems or related field plus 5 years of experience in systems/applications development. Experience with J2EE, Weblogic, and Oracle database technology also required. "Master's degree in appropriate field will offset 2 years of general experience. Submit resumes to Cynthia Thompson, FedEx Corporate Services, 90 FedEx Parkway, 2nd Floor Horizontal, Collierville, TN 38017. EOE M/F/D/V

Sftwr Eng to d/zn s/w applns. Dev RDBMS & GUI appl w/ Oracle, DB2 & M/F sys as D/B & Lotus Notes for dev Intranet appl. Data Model w/ Erwin & Rational Rose. W/k as tech'l & tech cnslt for OLTP/ ERP Data warehouse arch to d/zn DSS, OLAP, ODS, Data Marts and Data w/h. W/k w/ Oracle PL/SQL, Informatica, PwrCtr, PwrMrt, Cognos Perplay and Impromptu, Brio, Hyperion, Essbase and Business Obj. W/k with data sources from OLTP applns MVS, SAP & Oracle. D/zn & dev ETL method for data w/h, tune ETL load process & dev rpts. Data model & tuning. Shell scripts for data load & shell prgms in Unix. BS in Eng + 2 yrs exp. Comp salary. Apply: Netserv, 6580 Jimmy Carter Blvd., Norcross, GA 30071 w/ proof of w/k auth.

Sr. Sys. Analyst for full life cycle s/w solns; PM & team mgmt. Duties: Req analysis, proj specs, D/B dsgn, resource alloc & mng client req. Internet sys solns dev using M/S Tech VB .NET ASP. NET ASP JavaScript, SQL Srvr, COM/DCOM, MTS, XML, Rational Rose, ER-Win, Win 2000 & Intel based machines, customize/deploy, upgrade & maint. ebix-One, ebixASP, ebixMail, ebix-Exchange s/w pkgs, resource allocn & sch CMM levels, update ebix's methods & std & sys analysis & r/w. BS in CS + 2 yrs exp as a Prog Analyst with exp in Ebix software & Internet soln dev w/ MS tech. Comp salary. Apply EBIX 5 Concourse Pkwy #3200, Atlanta, GA 30328 w/ proof of perm w/k authzn

Knowledge Engineers needed. Seeking cand possessing BS or equiv and rel work exp. Part of rel work exp must include 2 years working with ART™Enterprise Artificial Intelligence and J2EE. Duties include: Analyze, evaluate and devise comp programs and systems; integrate and implement Artificial Intelligence expert system. Travel/relocation may be required. Mail resume, refs and salary reqs to: Mindbox, LLC, 300 Drake's Landing, Suite #155, Greenbrae, CA 94914

Regional Manager (Denver, CO) - Lead customer engagements & business development of television broadcast solutions throughout Latin America. Manage life cycle of TV automation projects from proposal design to hand-off to customer support. BS Comp Sci, Eng or related + at least 4 yrs management exp. Apply by mail only by sending cover ltr & resume to: Jonathan Kohn, Avecia Americas, Inc. 466 Beacon Street, Suite A, Boston, MA 02115. No calls.

Consultant

(Glen Mills, PA and other locations throughout the United States) Responsible for the implementation of Oracle ERP (Enterprise Resource Planning) focusing on CRM (Customer Relationship Management) for business clients. Design business processes and systems utilizing Oracle applications including Oracle Financial Applications, Oracle Supply Chain Applications, and Oracle CRM Applications. Responsible for the implementation of Oracle 11i involving the design, development, and implementation of Service and Sale modules, as well as the integration of Accounts Receivable and Order Management modules. Conduct requirements gather, gap analysis configuration of applications, and technical and functional analysis for customizations. Engage in the development and execution of unit and integration testing scripts for the applications being implemented. Provide go-live production support by resolving application issues. Utilize PL/SQL and Oracle Report Developer 6i to design and develop custom reports. Migrate setups and execute testing of software applications using Kintana.

Salary $74,752/year. Mon.-Fri. 9:00am-5:00pm. The position requires a Bachelor's degree in Computer Science, Mathematics, Management Information Systems, Engineering or Business Administration + 2 years experience in the job offered or 2 years of experience as a Consultant, Systems Analyst or Technical Associate. Related experience must include at least 1 year of experience in Oracle ERP (Enterprise Resource Planning), Oracle Financials Applications including Accounts Receivable, Oracle Supply Chain Applications including Order Management, Oracle CRM (Customer Relationship Management) Applications including Service and Sales, PL/SQL, Oracle Report Developer 6i and Kintana.

Please send your resume referencing Job Order Number WEB 433938 in PA CareerLink, FLC Unit, 235 W. Chelten Ave., Philadelphia, PA 19144. EOE

Software Developer sought by software development and database management company in Longmont, CO to work in Lisle, IL and other unanticipated job sites in the US. Design and develop computer software applications for company's emergency response call handling applications which access relational database management systems on Windows platforms. Develop system and software requirements, create architectures, code, test and debug the applications. Utilize Microsoft Foundation Classes, C++, Computer Telephony Integration, Telephony Applications Programming Interface and hardware device controls in the development process. Requires Bachelor's in computer science or related field, 3 years in the design and development of computer software applications that access relational database management systems on Windows platforms utilizing Microsoft Foundation Classes, C++, Computer Telephony Integration, Telephony Applications Programming Interface and hardware device controls in the development process. 8am-5pm, M-F, $75,000/year. Respond via resume to Employment Programs, PO Box 46547, Denver, CO 80202 and refer to CO5083510.

IT PROFESSIONALS

Consultant

(Glen Mills, Pennsylvania and other locations through the U.S.). Assist in providing consulting services for implementation testing development, maintenance and enhancement of software packages and applications by utilizing industry standard methodologies leveraging competencies in databases and database design, systems architectures, operating systems, data structures, algorithms and networking along with development tools such as ER Win to develop applications and systems utilizing Java Technologies, Microsoft Visual Basic technologies, COBOL, PowerBuilder n-tiered architectures on environments including Windows and legacy mainframe (TSO) leveraging database platforms such as Microsoft SQL Server, Oracle & Sybase. Perform technology assessments and development analysis in support reviews utilizing Load Runner and XML. Utilize data modeling tools such as ER Win and competencies in data structures, algorithms, and networking in contribute to the design and development of technical architectures. Assist in analyzing and revising existing system logic difficulties and documentation.

Salary is $57,150 per year, Mon-Fri, 9:00 am to 5:00 pm. The position requires Bachelor's degree or equivalent in Computer Science, Math, Engineering (any), Information Systems or Business Administration + 2 years of experience in the job offered or 2 years of experience as a Track Lead, Data Conversion Architect, Application Development Cons, Application Development Track Lead. Related experience must include a minimum of 1 year experience in Visual Basic, COBOL, PowerBuilder, Microsoft SQL Server, Sybase and Load Runner.

Please send your resume, referencing Job Order Number WEB434306 to the PA Careerlink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE

Programmer Analyst required by Kendall Park, NJ based Info Tech Solutions Provider. Duties: Product development, implementation and support. Responsibilities include requirements gathering, architecture, Product development, Acceptance planning, deriving test cases, UAT, Implementation, and post implementation support. Coordination with Spantel's offshore partner Mascon's IT team. Additional responsibilities include Process definition, Project initiation, Project Planning and Tracking, Metrics calculation, Build and release management, documenting product learning's for further enhancements. Conducting Market survey and researching on multiple products / competitors to meet the ever growing demands of customers. Development and implementation of the product to be in compliance with HL7 and HIPAA standards. Analyzing, architecting, designing and developing the product to interface with the legacy systems. Req: Bachelors degree in Math. or Sci. or Engg., or comp. Sci., or Information Technology (will accept an equivalency based on a combination of education and/or experience) and two years experience in the job offered or related occupation. Hours: 40hrs/wk Mon.-Fri. 9:00 AM to 5:00PM. Apply to President, Spantel LLC., 3084 Route 27, Ste 9, Kendall Park, NJ 08824

IT PROFESSIONALS

Senior Consultant

(Glen Mills, PA and other locations throughout the United States). Design and develop fast-track applications to reduce costs and provide a component-based approach in the enterprise applications utilizing J2EE solutions including EJB's, XML and XSLT. Implement Java (J2SE) solutions to allow our clients to run the same application on various operating systems, hardware platforms and consumer technological devices. Utilize Enterprise Application Integration (EAI) to provide a common framework for integrating incompatible and distributed systems allowing our client to integrate their business processes. Implement J2EE and EJB design patterns and develop strategies for mapping application requirements, developing best practices for J2EE and to collect EJB strategies. Use XML (Extensible Markup Language) as a standard data format for Enterprise Application Integration (EAI) solutions and utilize Enterprise Tools and Databases in provide support for the full development cycle.

The wage offered is $85,500/year. The work schedule is Monday-Friday 9:00am-5:00pm. The minimum requirements are as follows: Bachelor's degree or equivalent in Engineering (any), Business Administration, Computer Science, Mathematics or Information Systems plus 4 years experience in the job offered or 4 years experience as a Senior Consultant, Lead Developer, Programmer Analyst, or Software Programmer. Employer will regard a foreign degree to be equivalent to a U.S. Bachelor's degree as determined by an accredited credentials evaluation service. Related experience must also include at least 2 years of J2EE (including EJB's, XML and XSLT), J2SE (Java 2 Platform Standard Edition), Enterprise Application Integration (EAI), J2EE and EJB design patterns, and Enterprise Tools and Databases.

Please send your resume referencing Job Order Number WEB 434352 in the PA CareerLink, FLC Unit, 235 W. Chelten Avenue, Philadelphia, PA 19144. EOE

Snr Software Engineer to analyze, design, develop & architect web applications in component model (EJB) focusing on financial modeling & planning and utilizing high-level technologies such as EJB, JAVA, J2EE, JHTML, JSP, XML, XSL, FOP, Servlets, RMI and JavaBeans. Will develop planning tools & personalized web sites for in-house business units; design & develop graphs and charts using 3rd party technologies, and will monitor, maintain & upgrade components and database for business requirements. Requirements: Bach or equiv in C.Sc., Eng, Math or Physics, plus 2 yrs exper in job offered OR 2 yrs in on-line transaction processing. Candidate must also possess demonstrated expertise in the following: developing web applications in J2EE, JHTML, and EJB; in the administration of UNIX, Clearcase, and Webserver & in Oracle Database & financial modeling algorithms. Sal: $80,405/yr; M-F, 9a-5p. Submit 2 resumes to Case # 200300130, Division of Career Services, Labor Certification Unit, 19 Staniford St., 1st fl, Boston, MA 02114. EOE. Applicants must be eligible to accept full-time employment in U.S.

Business Development Manager - Applications sought by company that provides computing network storage and that manufactures computer storage devices to work in Louisville, CO and other unanticipated job sites in the US, to be the liaison between the business area and IS for identifying and executing initiatives to improve client satisfaction. Understand business area strategies/processes and performance objectives and be involved in the full life-cycle software/process development. Analyze and determine technology requirements to enable the achievement of these objectives. Test and troubleshoot the finished applications (developed using Java, JSP, ASP/VB, FRED, SQL/DB, HTML, XML, JavaScript, SAP R/3 and ABAP/4) to make sure that the requirements have been met. Manage allocation of resources including processes to meet objectives, monitor problems, escalation process and issue resolution. Requires a Bachelor's in computer science or related field, 3 years as a software engineer using SAP R/3 and ABAP/4. Working knowledge of Java, HTML, XML and JavaScript, JSP, ASP/VB, FRED and SQL/DB. 8am-5pm, M-F, $112,842.70/year. Respond via resume to Employment Programs, PO Box 46547, Denver, CO 80202 and refer to CO5083498.

Senior Analyst Developer sought by home satellite design/mfg company in Littleton, CO to work in Englewood, CO and other unanticipated job sites in the US. At a senior level, engage in full life-cycle software development and customization of Oracle General Ledger, Payables, Receivables and Fixed Assets modules of Oracle financial and business applications. The applications are designed and developed in a three-tier client/server environment and utilize Windows NT or UNIX operating systems. Analyze requirements, create designs, design documentation and code, test, debug, modify, and implement the applications. Serve as technical lead as needed. Utilize PL/SQL, SQL*Plus, Pro*C, HTML, Developer 2000 and other Oracle tools in the design and development process. Requires a master's or foreign equivalent or bachelor's or foreign equivalent in eng including chemical eng or computer science, plus three years developing and customizing Oracle financial and business applications; 3 yrs experience performing the core duties and using the technologies described above. (The 3 years in the job offered may be concurrent with the three years required under education). 8am-5pm, M-F, $80,000/yr. Respond via resume to Employment Programs, PO Box 46547, Denver, CO 80202 and refer to CO5081268.

Shaktee Technologies Inc (DBA Exceel) has multiple openings for RF Electrical Engineers (Cellular) at its office in San Jose, CA and unanticipated client sites throughout the US. Must be able to travel temporarily to client sites within the U.S. with expenses paid by employer. Min reqmts include BS in Electrical Eng. or related field. Please send resume to Attn-HR Manager, 1975 Hamilton Ave # 33 San Jose, CA 95125

Oracle Application Consultant w/exp in Oracle Application ERP, Oracle Developer 2000, Oracle Form, Quest s/w (Toad), Oracle SQL Plus, Oracle Report, Oracle Discoverer, Oracle Designer 2000 & Reports. Perform conversion of data into Oracle Application using SQL Loader & Data Loader on Win 2000, HP UX & Sun Solaris. Send res to: Optima Technology Partners Inc., 264 South River Rd, Ste 454, Bedford, NH 03110

Software Engineer to dsgn, dvlp & write systm & device drivers for LAN/WAN network devices & to debug & perform integration tests on networks based on Cisco Routers & Switches. Provide tech support. Will utilize IP security, Novell Netware & Java. Req: Masters in Engg or Comp Sci + 2 yrs exp in job offer or job duties. Resp to: Artilligence Inc., 1500 Market St., E Tower 12 Fl, Philadelphia, PA 19102. Fax 603-372-2771, E-Mail sal.hernandez@artilligence.com

S/W Engineers to analyze, design business appls for SAP R/3, ABAP, Workflow, C, C++, Java, VB, Oracle, SQL, etc under Windows, UNIX OS; analyze business processes to determine reqs & generate reports; prepare documents, flow charts and programming specs; create appl prototypes for client approval and rapid appl development; train users in business appl usage. Require MS or foreign equiv in CS/Engg (any branch)/Math & 1 yr exp in IT. High salary. F/T position. Travel Required. Resume to HR, Smartsoft International Inc., 3965 Johns Creek Court, Suwanee, GA 30024

PROG ANALYST - WEB DVLPR. Analyze, dsgn, build & launch high profile e-commerce sys using n tier arch & object oriented technologies. Admin intranet info server. BS in Comp Sci, Electrical or Electronics Engnrg + 3 yrs exp in job offered or as a Software Engnr - Web Dvlpmnt reqd. Exp must include Java, XML, ASP.net and VB.net. High mobility preferred. 40 hrs/wk, OT as reqd, 8 am - 5 pm, $66,731/yr. Submit resume to: Manager, Butler County CareerLink, Pullman Commerce Center, 112 Hollywood Drive, Suite 101, Butler, PA 16001-5699. Please refer to Job Order No. WEB 433076

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Responsible for programming, development analysis, implementation of enterprise software applications to meet client's needs and specifications on operating system platforms. Need at least 1year of experience in MQ Series and Messaging Sybase DB2-UDB and Java/ J2EE technologies. Checkable references required. 1 Yr experience withMaster's Degree or equivalent in Computer Science Engineering (any field) Math Must be available 24/7 to provide emergency technical support. Will be paid if services are used as per call basis. Salary $78 300/-year. Send this ad and2 copiesyour resume /letter of qualification to Job order 2004-576 P O Box 989 Concord NH 03307-0989

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Software Engineers Systems to research, design, develop, implement software solutions for clients using LabVIEW C C++ VB, SQL Server Database connectivity, PXI modules, etc. under Windows envir. interact with clients to write system specs and perform study analysis and design of systems for automated test reqs, provide onsite implementation/technical support. Require MS or foreign equiv in CS/Engg (any branch) & 1yr exp in IT. Competitive salary F/T Resume HR V I Engineering, Inc. 37800 Hills Tech Drive Farmington Hills, MI USA 48331

Engineer - EMC Corporation (Documentum Division) has an opening for Senior Consultant in our Chicago, IL office. Requirements: BS in CS or Engineering plus 4 years experience in Software Design/Development. Please e-mail resume to Kristy Zimmerman (kristy.zimmerman@documentum.com) Please reference RO/TE

Prog Analysts to analyze, design/develop s/w applis using Java, JavaScript, VBScript, ASP, HTML, Weblogic, Oracle, SQL, COBOL, DB2, CICS under Windows, UNIX & MVS OS; perform unit, functional, integration, regression and systems level testing; analyze user reqs, prepare design documents, develop & enhance online & batch programs, implement, install, test, debug and modify new/existing applis. Require: BS or foreign equiv in CS/Engg. (any branch) & 2yrs exp in IT. Travel involved. High Salary. F/T Resumes to HR Global IT Solutions USI, Inc. 600 Stevens Port Drive, Ste 125, Dakota Dunes, SD 57049

Software Quality Assurance Engineers

Exp in test planning, test suite devlpt, test exec & defect reporting & testing s/w applns in Windows, Unix or Mainframe envrmt. ERP/CRM/s/w applcs in banking fin/enterprise svcs. Working knowl of industry stndrd tools in test automation & defect tracking tools. Req's Min BS + 1 yr exp Level 1) BS +3 yrs or MS + 1 yr Level 2) Send resume & cover letter to: RelQ Software Inc 3080 Olcott St, Suite 100-B Santa Clara, CA-95054 worksite in Santa Clara, CA and various unanticipated locations throughout the US

Principal Information Systems Analyst, Colorado Springs, CO. Develop & support PeopleSoft applications for Payroll, Benefits Administrations and Human Resources Management Systems (HRMS). Lead PeopleSoft systems analysis programming & user support team. Act as team lead of 6 employees including Programmers, Database Administrators and Systems Analysts. Min Req: BA or foreign equiv + 2yrs exp w/Peoplesoft HR apps upgrades & programming in SQR language. $72,000/yr 40 hrs/wk M-F 8:00am-5:00pm. Must have proof of legal authority to work in U.S. Apply by resume only to Workforce Development Programs, PO Box 46547 Denver CO 80202 Job Order #CO5084220

Senior Programmer Analysts to lead team to analyze, design, develop and implement applis using SAP, C, J2EE, JSP, RMI, Websphere, Weblogic and EAI tools like Mercator, Sybase, Vitria, Webmethods etc. under Windows/Unix OS; responsible for data modeling, gap analysis, etc. involve in system/business analysis, develop functional specs based on business reqs, design, develop interfaces and perform integration of various modules, test, team members/train end users. Require BS or foreign equiv in CS/Engg (any branch) & 3 yrs exp in the IT field. Travel involved. F/T position competitive salary. Resume to HR Konaru Software Services, 333 Swanson Dr Ste 124 Lawrenceville, GA 30043

Developers/Prog Anlysts for various unspecified locations. Analyze design & develop computer applications & programs using Business Objects, Business Objects Designer, Webintelligence, Weblogic, Webi SDK, Java, JSP, HTML, Informatica, Oracle, SQL Server, SQL, PL/SQL and T-SQL in a Windows & Unix environment. Bach degree or its equiv in Comp Sci, Engg, Sci or its equiv & two years exp in the job duties. Respond to Nihaki Systems Inc. 346 Georges Road Suite 1 Dayton, NJ 08819 Fax 732-438-6973, e-mail info@nihaki.com

IT Product Business Mgr. AVP Baltimore MD Wachovia. Serve as IT tech coordinator for trading floor applis. Reqs: Reqs: MA in MIS and 3 yrs. exp. in pos. off. or as a Help Desk Analyst or IT Tech. The 3 yrs. reqd exp. must have incl. providing support to trading floor users w/ avg. volume of trades of 50 million shares per day & must incl. work w/ trading floor appl. such as Brass, NASDAQ, Reuters-Triad and work with STP and evaluating user rqmts. and making recs. on solutions. 40 hrs/week. send resume & cvr ltr to Gen Ann Henderson Wachovia Corp 401 S Tryon St. 27th Floor, Charlotte NC 28288. No Phone Calls Please

Quality Eng wanted by company engaged in graphics and multimedia technology design, manufacturing and marketing. Requires Bach in CS or EE plus 3 yrs exp including min 2 yrs audio/video software. Reply to ATI Research, Inc. H.R Dept., Attn: K.B., 62 Forest Street, Marlborough, MA 01752.

Deployment Engineer to use telecom network call hndling anlys & billing exp to anlyz comp sys & prvde instal of company's wireless comm S/W apps & sys on client sites. install, upgrd & trblshoot S/W apps & setup comm cnnctvty b/w various 3rd party H/W sys; provide tech & bus comp sys input for clnt & enduser; train users onsite rgrding comp S/W apps. Must have a Bach or equiv in CS or any eng degree; 2 yrs telecom & ntwrk exp using Unix & Oracle or sim RDB sys; hands-on exp in call hndling anlys & billing; demnstrtd knwldg of SS7 ANSI TCAP SS7 ITU TCAP SCCP & MTP & exp w/ at lst 2 wireless protocol inc ISUP, IS826 and IS41EE. Contact Lightbridge, Inc. 320 Interlocken Pkwy Broomfield CO 80021 (Job #1465 0061)

Sr Web Developer Wachovia Corp Charlotte NC. Evaluate web reqs or tech issues. Reqs: BA in Eng or Comp Science and 4 yrs exp. in pos or as Senior Prog Analyst or Computer Progr. The 4 yrs must incl analysis and design of software applis and databases using server-side prog languages such as ASP and JSP STRUTS PL/SQL and work w/ a content mgmt system software such as Vignette's (TCL) and work integrating Vignette (or similar software pkg.) with a web-based XML editor such as eWebEdit Pro+XML. 2 yrs of the req exp must incl work with XML and stored procedures database dvlp using Oracle or a sim database mgmt software. M-F 8-5. Send resume to Jane Higgins Wachovia Corp. 401 S Tryon Street, 27th Floor Charlotte NC 28288-0475. No phone calls.

COMPUTER SYSTEMS ANALYST sought by Valet parking services to program administrative and payroll systems and update computer hardware, software and network. Bach Rqrd or equiv/combi of educ + exp. Exp rqrd. Comp Salary. Send resume to Valet Plus Parking Systems, Inc. 161 Aragon Ave., Coral Gables, FL 33134 or Fax 305-461-3303

Intelligum LLC seeks Systems Mgmt Consultants to design, dvlp, implmt and enhance scalable solns using Tivoli suite to automate & manage Systems & Networks consisting of AIX, Solaris, Linux & Win NT. responsibilities also include establishing Tivoli infrastructure, upgrading Tivoli Framework and related functions. BS or equiv in CS, Info Sys or rel field & 2 yr relv exp. Multiple positions in Alpharetta & other locations. Apply HR Intelligum LLC 5930 Barrington Ln Alpharetta GA30005 Fax 678-330-1046

Programmer Analysts
(2 positions)

Programmer Analyst w/exp in ASP, XML, XSL, SQL Server, RoboHTML, ActiveX, COM+ & VB. REF AD#1

Programmer Analyst, Sr w/exp in Java, J2SE, J2EE, HTML, Javascript, Weblogic Server, Apache Web Server, Oracle, TogetherSoft, Jakarta's Ant & CVS/WinCVS. Customize BEA's Personalization/Portal Server & Interwoven's Teamsite. REF AD#2

Mail Resumes to EBusinesscorp Inc. 209 West Central St, Ste 106, Natick, MA 01760. PLS MENTION REF# WHEN APPLYING

Jr Programmers, Programmers, Software Engineers & DBAs. Design, develop, test and implement specialized software apps in (a) Oracle Financials & Manufacturing 11i & rel tools, Erwin, Cognos Suite, Business Objects, MF Cobol & rel tech (b) SQL DBA, Unix Admin, VB, Sybase, Cobol, C, Cold Fusion & rel tech (c) J2EE & rel tech, Rational ClearCase, CORBA, MQSeries & rel tools (d) PeopleSoft HRMS (HR, Payroll and Benefits Administration), Application Engine, SQR, Cobol, DB2, CICS, nVision, Crystal Reports & rel tools (e) Java & rel tools, CORBA, Sybase, Swing, Rational Tools & rel tech (f) Oracle Database Admin in Oracle 11i, Oracle Enterprise Manager, Solaris, AIX, VB, C++, SQL*Plus & rel tools (g) Cold Fusion & rel tools, ASP, XML, DHTML, Crystal Reports, Java, VB, DCOM, MS SQL, Oracle & & rel tools (h) Oracle Financials & PeopleSoft, Tuxedo, Developer Designer 2000 & rel tools (i) Hyperion Essbase Apps & rel tools (j) Oracle, Peoplesoft, ASP, Java & rel tools, SQA Robot, Mercury Test Director, Silk & rel tools (k) JDK, ASP, CORBA, Oracle, SQL Server, Linux, VB, HTML & rel tools (l) SAP-SEM, SAP R/3, SAP BW, ABAP/4, SAP (SD, MM, PP, FICO) & rel tech (m) Peoplesoft Financials (AP, AR, GL, FA) & rel tools. US Workers only. Consulting positions requiring travel. Prevailing wage/benefits. Send resume to HR SSG 3300 Buckeye Road Suite 555 Atlanta GA 30341 identifying interested position(s). No Phone calls please

Prog/Analysts to analyze, design software applis using C, C++, Compile Tools, Oracle, Informix-4GL, Informix Online, SQL Server etc. under Windows, UNIX OSs; design APIs for backup/recovery framework, provide on site maintenance support such as debugging, modifications, fine tuning & code optimization. Require BS or foreign equiv. in CS/Engg (any branch) & 2 yrs of exp. in IT. F/T competitive salary. Travel involved. Resumes to: HR, Samafor Technologies, Inc. 3300 Holcomb Bridge Road, Ste 212, Norcross, GA 30092

Sr. Prog Analysts to manage teams to analyze, design, develop applis in client server/3-tier architecture using C, C++, Tuxedo, Binove, MQ Series, Oracle, Sybase, Socket API, COBOL, etc. under Windows, Unix OS; analyze business processes to determine reqs, implement applis and perform strategic planning/operations support, provide end user training. Require BS or foreign equiv in CS/Engg (any branch) & 3 yrs exp in IT. Competitive salary. F/T travel involved. Resume to HR Ordusion Technologies Inc. 3883 Rogers Bridge Road Suite 504 Duluth, GA

iKuni Inc. currently has an opportunity in Palo Alto, CA for a Software Engineer (Artificial Intelligence Engineer) position. Req's Ph.D + 3 yrs of exp applying AI techniques to real-time games.

You may send a resume to iKuni, Inc. 3400 Hillview Ave, Bldg 5, Palo Alto CA 94304

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Prog Analysts to analyze, design, develop, implement CRM apps using Java, Java Script, VB, VB Script, ASP, SQL Server, Oracle, Clarify Suite of Products, XML, Visual Source Safe on Windows & UNIX OS; work with business analysts to mac. reqs for Clarify Data Model; involve in customization/implementation of Clear Support applis; create, execute batch programs; test, debug, modify existing software. Require: BE or foreign equiv in CS/Engg (any branch) & 2 yrs of exp in IT. F/T. Travel involved. Competitive salary. Resume to: HR ABZ Consulting Inc. 2600 Century Parkway, Ste 100 Atlanta GA 30345

Software Engineer (with Bachelors degree and 3 years experience) - Job Entails and requires experience in design and development of applications using C, C++, Informix, Network programming, Sockets, X-Windows/Motif, AWK, PERL, Lotus Notes, Rational Rose and Unix. Relocation within USA Possible. Attractive compensation package. Send resume to Bridger Promo Asset Control Systems Inc. One Rockefeller Plaza, Suite 1420, 14th Floor, New York, NY 10020

System Administrators to install, maintain, administer Windows, Linux, Solaris OS; install, maintain Web/Mailing Servers; plan, maintain, troubleshoot LAN/WAN; maintain backups & provide hardware/software support for users; create, update user accounts; evaluate new/existing systems; recommend future IT strategies. Require BS or foreign equiv in CS/Engineering (any branch) and two yrs exp in job offered. MS or foreign equiv in one of the above fields will be accepted in lieu of BS & 2 yrs exp. F/T. Travel involved. High Salary. Resumes to HR Global IT Solutions USI Inc. 600 Stevens Port Drive, Ste 125, Dakota Dunes, SD 57049

Programmer Convert project specifications and statements of problems and procedures to detailed logical flow charts for coding into computer language. Develop and write computer programs to store locate and retrieve specific documenter data and information. May program web sites. Analyze review and rewrite programs. Develop programs from workflow charts or diagrams considering computer storage capacity speed and intended use of output data. Prepares or receives detailed workflow chart and diagram to illustrate sequence of steps to describe input, output and logical operation. Compiles and writes documentation of program development and subsequent revisions. Assigns, coordinates, and reviews work and activities of Jr Programming personnel. Trains subordinates in programming and program coding. Use a variety of software tools including but not limited to Cobol CORBA, Fortran, Visual Basic, Oracle, PeopleSoft, Crystal Reports, J2EE, C++ Servlets, XML, SQL & Weblogic. BS degree or foreign edu. equiv and 1 yr exp. req. Will accept any suitable combination of edu training or exp in lieu of the stated edu. Travel and/or relocation required.

Jr. Programmer to assists a Programmer by performing elementary programming tasks which concern limited and simple data items and steps which closely follow patterns of previous work done in the organization. May perform routine programming assignments under close supervision. May perform elementary fact-finding concerning a specified work process. Work is closely monitored in progress and reviewed in detail upon completion. Will use software tools including but not limited to COBOL, USAS, J2EE, C++, VC++, MQ Series, Servlets, XML/SQL Server. BS degree or foreign edu. equiv. Will accept any suitable combination of edu. training or exp in lieu of the stated edu. Travel and/or relocation required.

Send confidential résumé to Hexaware Technologies, Inc. Attn HR 4343 Commerce Court, Suite 616, Lisle, IL 60532

VP IT & Chief Info Officer (CIO) (Denver CO) Respons for IT budget exceeding $25 million plan direct and control activities such as systems design and analysis, application and systems prog., dbs mgmt, network sys, telecomm and data processing operations; provide guidance to senior management to ensure tech capabilities are fully leveraged. Create and dvlp control policies and procedures for computer operations; designate priorities for computer operations and applications dvlpmt work; will support business improvement initiatives by providing tech guidance. Maintain knowl relating to tech directions and trends in the energy business field. Oversee and direct as necessary a full-range of energy related info tech solutions and sys incl energy planning systems such as GIS, CAD and energy simulation systems, energy control systems such as SCADA and DCS metering technologies; maint mgmt sys incl related scheduling capabilities; large scale contract/customer mgmt sys; web delivery of energy-based solutions and internal support sys such as employee portal or intranet. Design sys capable of supporting mergers, acquisitions and divestitures and provide info tech leaderships when this activity occurs. Must have exp in Mergers and Acquisitions and divestitures technology reqs. Bachelor's degree or equiv in Bus. Admin, Commerce, Comp Sci, IT or related field. 7 yrs exp in the position offered or 7 yrs exp in the related occupation of VP Info Tech & Chief Info Officer (CIO). Please forward credentials to: HR (EC02O), Duke Energy Corporation, 422 South Church Street, Charlotte, NC 28202 EOE MFDV Attn: JLC

Infinite Computing Systems a Cedar Rapids, Iowa Company is seeking qualified computer professionals. Current positions available must meet the following requirements. All positions require at least a Bachelors degree (3 year fgn Bachelor degrees are acceptable). We may have additional positions available in addition to the ones listed. Multiple positions are likely available in some positions. Candidate's salary offered relative to experience and skills. Candidates must be willing to relocate and travel as needed.

A variety of positions are available which require between 1-5 years of experience in the below-listed skills. Certain positions may require a Masters degree.

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- Easytrieve, QMF, Cobol, CICS, SAS, TSO/ISPF
- C, C++, GUI, Oracle or Informix or Sybase

Please send resume and cover letter to Raj Inani, President, Infinite Computing Systems Inc. 230 2nd Street - Ste 214 Cedar Rapids, IA 52401

COMPUTER GRAPHIC DESIGNER to design and develop web-related applications and visual components of computer animation productions using Adobe Photoshop, Image Ready, JavaScript, Macromedia Flash, Dreamweaver, Corel Draw, Illustrator, Quark, Visual Source Safe, Cascading Style Sheet (CSS), 2D Animation and Homsite. Require Bachelor's degree (or equivalent) in Computer Graphics, Graphic Design, or a closely related field with 2 yr of exp in the job offered. Each 3 yrs of progressively responsible work exp in the field will be considered equivalent to 1 yr of college education. Extensive travel on assignment to various client sites within the U.S. is required. Competitive salary offered. Apply by resume to Ravi Kandimalla, Everest Computers Inc. 875 Old Roswell Road, Ste E-400, Roswell, GA 30076 Attn Job LM

S/W Applications Engineer. Assist in developing s/w using C, C++, VB, Html, Xml/Xsl, Javascript on Windows, MacOS, Sun Solaris, Unix/Linux operating systems, MS Access, SQL, Network/Photoshop. Develop content for all internet-based doc. Req Bachelors in Comp Sci/Electrical Eng. 40hrs/wk. Job/Intvw Site Torrance CA. Send resume to Classic Components, Attn Michelle Bartolo, 23605 Telo Avenue, Torrance CA 90505

Software Engineer to analyse, design, develop, test, implement and support PeopleSoft's web architecture global ERP Solutions as a technical lead; develop solutions throughout the project's life-cycle with hands on experience in SQRs, security, LDAP, Informix, Oracle and PL/SQL. Bachelor Degree and 5 years in full-cycle experience for HR, PY, AP, GL, T&L, PO, BI and SS. Send Resume to Datum Software Inc. Attn. HR, 6525 The Corners Parkway, Suite 312, Norcross, GA 30092

SiC Power Device Scientist. Work on the design (2D device simulations and CAD layouts), processing and testing of SiC bipolar power devices such as PiNs, BJTs, and GTOs; develop detailed process travelers and inspect wafers through the fabrication process. (This may involve stopping by in the evenings or weekends for 1-2 hours as needed.); prepare scientific and technical proposals for securing funding from various Government funding agencies; make technical presentations and coordinate with team of scientists, engineers and technicians to develop fabrication processes for SiC based Power Devices. Requires a PhD in Electrical Engineering, Materials Science, or related field and 3-5 years experience in design and fabrication of power devices. Must be willing to perform tasks outside of normal job duties and past experience. Must have a "whatever it takes" attitude to get the job done, which means working 50 hours per week and/or weekends when needed. Permanent resident status (Green Card) or citizenship required. Send resumes to CREE INC., 4600 Silicon Drive, Durham, NC 27703. (No phone calls please!) CREE is an Equal Opportunity Employer M/F/D/V and a Drug Free Workplace.

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Software Engineer. Miami, Florida. Design, test, implement and support software products and systems. Develop new and modify, improve and support existing software products and solutions. Liaise with other technical professionals. Utilize C programming language, Java and Visual Basic object-oriented programming language, SQL and on UNIX(AIX) and Windows NT network operating systems. Requires Bachelor's Degree or foreign equivalent in Computer Science or Engineering plus one (1) year exp. in the job offered or one (1) year experience in the related occupations of Technical Support Engineer or Computer Engineer. $73,912.80 per year. 40 hours per week, 8:30am-5:30pm. Send resume to Job Order number FL-2529282, Workforce Program Support, P.O. Box 10869, Tallahassee, FL 32302-0869

Blackbaud Inc. the leader in bringing technology to non-profit organizations and educational institutions seeks qualified individuals for the following positions at our Charleston, South Carolina, headquarters.

Software Engineer: Develop, customize, integrate and support Blackbaud's software systems using Visual Basic, ASP, ASP.NET, HTML, Javascript, SQL and other internally used technologies.

Quality Assurance Engineer: Write test plans for automation. Develop, maintain and execute automation code. Develop software using Visual Basic.

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(Temple Terrace, FL) Provide conceptual & high-tech solutions to complex business & technical problems. Develop & implement standards & verify results. Provide technical expertise in operating systems & applications systems in the telecommunications industry. Design & develop business process automation systems for the telecommunications industry on client server architecture using object oriented techniques & software development using C/C++, Unix, Java, SQL & Windows NT. Position requires a Bachelor's Degree in Computer Engineering or Computer Science & 3 years of experience in the job offered or 3 years of experience in the related occupation of Engineer, Software Specialist, or Analyst. 3 years of experience must include experience with C/C++, Unix, Java, SQL & Windows NT. $71,600/year. 9 AM -5 PM, M-F, 40 hrs/wk. Submit resume & copy of advertisement to Workforce Program Support, PO Box 10869, Tallahassee, FL 32302-0869. Job order number FL 2531906. Must have proof of legal authorization to work in the United States.

Internet company seeks Ph.D Research Engineers responsible for innovative research. Interested applicants should send resumes to K. Wolfe, 1600 Ampitheatre Parkway; Mt View, CA 94043. Visit www.google.com for additional information.

Software Engineers & Programmer Analysts sought for openings nationwide. Exp in technologies such as Case tools, DB2, CICS, Cobol, Business Objects, JCL, REXX, SAP R/3, ABAP/4, WebSphere, VisualAge, EJB, JSP, ATL, MTS, Sybase, Informix, SQL Server, FoxPro & Oracle. Some positions req Masters or equiv in Tech, Mech Engg, Sci or Comp Sci. Some positions req at least 4 yrs exp in IT field. Equiv degree & exp also accepted. Exc. pay & benefits. Must be willing to relocate if necessary. Pls mention position applying for. Resumes to Ravi Jagannathan, Rashi Information Systems, 1132 Hamilton St, Ste 300, Allentown, PA 18101

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VIRGINIA
Application Engineer

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Please forward your resume to: CSC, Attn: J. Le, 2100 E. Grand Ave., Mail Code A209, El Segundo, CA 90245. Please indicate the specific job title and location for which you are applying.

Software Engineer, Network Sensor (Atlanta, GA position). Requires a Master's degree or equivalent in Comp. Science or Info. Security & 3 yrs' experience in the job offered or 3 yrs' experience programming in C++ on Windows and Linux platforms. In lieu of a Master's degree will accept two additional years of experience as stated. Stated experience must include writing cross-platform code for Windows, Linux and Solaris; performing protocol analysis including packet-based protocols; designing, developing and unit testing multi-threaded applications utilizing multi-process synchronization techniques using semaphores, IPC and sockets; and analyzing network security vulnerabilities and exploits. 40 hrs./wk. Send resume by mail to: Internet Security Systems, Inc. 6303 Barfield Road, Atlanta, GA 30328 ATTN: T. Zebley

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Computer Professionals (Multiple Openings) Software Engineer/ Sys Analyst/ Programmer Analyst/DBA. Must have bachelor degree or equivalent and experience in some of the following: Java, Cobol, JCL, C/C++, VB, ASP, Databases (Sybase / SQL / Oracle / MS Access / DB2), ERP/CRM (Oracle, Peoplesoft, SAP, JD Edwards, BAAN, Siebel, Vantive), Datawarehousing Tools (Cognos/ Informatica/ Business Objects/ Datastage/ Microstrategy), Tools (CMSynergy, Vitria) in Windows (95/98/2000/NT/XP) and/or UNIX and/or Linux operating systems. Must be able to travel or relocate nationwide. Send Resume to HR Manager, Adaequare, Inc. 10817 Waterbury Ridge Ln., Centerville, OH 45458. Or resumes@adaequare.com. Only email/mailed resumes accepted (No Walk ins)

JVD InfoTech, Inc. seeks Programmer Analyst based out of our Pittsburgh, PA loc. Analyze data proc. problems, user req., procedures, automation & improvement problems. Work with z/OS/ S390 Systems, RACF, sysplex, IPL, VICOM, WebSphere App-Server Security, LDAP, SSL, LTPA, OO Modeling & Design + dev using Java-Server Side, J2EE, EJB, Servlets, JSP, JMS-MQ Series, JavaMail, JNDI, JDBC, C/C++, MVC Design Patterns, Struts Framework, UML (Rational Rose) & XML using various App Servers (WebSphere, WebLogic) + relational databases (Oracle, DB2). Involves travel + possible relocation. Must have Bachelor degree in Engineering or related field + 2 yrs experience. Resume to Mr. Bhoop, JVD Infotech, Inc. 7 Dorchester Drive # 211, Pittsburgh, PA 15241A

Programmer Analyst - Must have Bachelor degree or foreign equivalent Computer Science, Computer Technology or related. Must have 2 years of experience in the job offered or in Computer Consulting or Project Management. Duties are to design and development of computer programs; develop and maintain specifications, modifications and additions to programs; locate and correct user problems; analyze programs to increase operating efficiency and develop programs to meet user requests. Requires 2 yrs exp in AS/400-iSeries, RPG/400-ILE, CL/400, DB2 UBD, SQL and SDLC and TIM textile ERP software. Qualified candidates must send resumes to Datatex Textile Information Systems, Inc. Attn: Carol Lesker, 11810 Northfall Lane, Bing 1203, Alpharetta, Georgia 30004

CompuSystems, Inc. a technical consulting company has multiple openings for IT Professionals and Consultants in various positions. Duties will include but not be limited to developing and designing s/w systems using various h/w, o/s tools, s/w packages and languages. A relevant degree or its equivalent is required. Competitive salaries offered. Apply to resume@compusystemsnet.com or CompuSystems, Inc., 1955 W. Hamlin Rd., Ste. 200, Rochester Hills, MI 48309

SOFTWARE DEVELOPER I: to design, develop and debug application software using Java, JDBC, EJB, RMI, XML, UML design patterns, SQL and Oracle Databases. Perform duties under close supervision of project manager to ensure accuracy and the project progresses according to prescribed instructions and expected results are met. Require B.S. degree in Computer Science/ Info Systems, an Engineering discipline, or a closely related field with 1 yr of exp in the job offered. Competitive salary offered. Apply by resume to Michael Fleming, EPL, Inc., 22 Inverness Center Pkwy Ste 400, Birmingham, AL 35242. Attn: Job NB

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Sarb-Ox

Great Plains software until the spring of 2005 in order to help it meet Sarbanes-Oxley requirements that kick in when its fiscal year ends Dec. 31, Thompson said.

Crown Media, which is using software from Movaris Inc. to test its IT and financial controls, plans to complete all remediation and testing of its systems by Dec. 1. Thompson said external auditor KPMG LLP will then test the systems to determine if further revisions are needed.

If Crown Media didn't have to meet the Sarbanes-Oxley compliance deadline, it would have installed the Great Plains applications this year in order to have a clean cutover to the new accounting system on Jan. 1, Thompson noted. "Because Sarbanes-Oxley is so important to everybody, we didn't want to take the chance," he said.

Analysts said Crown Media isn't alone in making such decisions. "I've seen many companies postpone projects," said Tim Welu, CEO of Paisley Consulting Inc., a Cokato, Minn., firm that does consulting work and develops software for managing audits of both IT and financial controls.

"Most companies I'm dealing with are trying to put everything in by the end of September. And if they can't do it by then, they're postponing until Q1 2005," said Marios Damianides, a consultant at Ernst & Young LLP in New York and international president of the Information Systems Audit and Control Association in Rolling Meadows, Ill.

> **We went through a whole reprioritization of IT projects for '04.**
>
> **MARK THOMPSON,** SENIOR VICE PRESIDENT OF FINANCE AND IT, CROWN MEDIA HOLDINGS INC

Joseph Puglisi, CIO at Emcor Group Inc. in Norwalk, Conn., said the looming Sarbanes-Oxley deadline prompted the construction services firm to limit the initial rollout of an upgraded ERP system to some of the units in its facilities services division. The new system, which is based on PeopleSoft Inc.'s applications for midsize companies, was installed in March.

In order to facilitate its compliance initiative, Emcor decided to wait until next year to add functionality such as the human resources management software that's in the PeopleSoft EnterpriseOne product line. It's also holding off on converting other parts of the facilities services division that continue to run on older versions of the PeopleSoft software or other types of ERP applications, Puglisi said.

Sarbanes-Oxley "has created enough of an extra burden on our accounting staff to effectively eliminate the possibility of moving forward with some accounting systems initiatives," he added.

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>
> **JOSEPH PUGLISI,** CIO, EMCOR GROUP INC

In some cases, companies have fast-forwarded systems installations in order to add needed functionality and still meet the compliance deadline.

Hilton Hotels Corp. in late March finished installing a homegrown sales reporting system that was written in Visual Basic .Net and runs on Windows 2000 and SQL Server, said Damien Bean, vice president of corporate systems at the Beverly Hills, Calif.-based company. "We made plans last November not to have any Sarbanes-related systems installed during the second half of 2004," Bean said.

Even though companies will halt new systems installations this fall, they still plan to proceed apace on IT development work, said Damianides. Furthermore, the impact on IT spending is expected to be negligible because most companies plan to spend funds that were allocated for project rollouts in different areas within IT, he added.

"I'm seeing a fairly consistent spend," he said. "It's more a redistribution of funds." 48209

Continued from page 1

Boeing

tion, Cisco will provide Boeing with its Call Manager software, gateways and network-traffic trunking devices.

Boeing and Cisco wouldn't disclose the expected value of the deal, but several analysts said it could easily surpass $150 million based on an average cost of $1,000 per worker for VoIP phones and related software. The price tag could be much higher depending on how much of Boeing's underlying network infrastructure is replaced, said Elizabeth Ussher, an analyst at Meta Group Inc. It's possible to spend $1,500 to $1,700 per worker on such projects, she added.

The size of the planned deployment impressed Ussher and other analysts who view Boeing's project as another indicator of a recent uptick in the adoption of VoIP technology by corporate users.

"We're finally starting to see the floodgates open," said Kathryn Korostoff, president of Sage Research Inc. in Natick, Mass. "Every company knows VoIP is the wave of the future, but it's been a matter of when it will take off."

Increased Interest

Korostoff said the increased interest is partly the result of two developments: The cost of VoIP phones has started to drop, and many traditional voice switches are aging and need to be replaced.

Other large installations that are under way include a project at IBM, which in March outlined plans to provide VoIP phones to about 400,000 employees and contractors over the next five years. IBM is using a combination of gear from Avaya Inc., Cisco and Siemens AG [QuickLink 45248].

Boeing officials said the Cisco phones and switches will replace devices made by Avaya, Lucent Technologies Inc. and Nortel Networks Ltd. The contract with Cisco covers a five-year period and could be extended if needed, according to Terrill. He said Cisco already is the primary supplier of the more than 1,000 WAN routers and 5,000 LAN switches that Boeing has on its global data network.

Cliff Naughton, director of network services at Boeing, said the company expects to get cost efficiencies by running a converged network for voice, video and data traffic, but he wouldn't elaborate. "There is a payback in operating expenses," Naughton said. "It met our own internal rate of return."

Both Terrill and Naughton repeatedly used the word "journey" in describing the planned rollout, pointing out several concerns they have had about VoIP technology — some of which have yet to be fully resolved.

For example, Boeing has run a VoIP pilot program for the past three years with 4,500 Cisco phones at operations in four states. Terrill said the tests have shown that voice quality is lessened for home-based workers who use cable modems or Digital Subscriber Line connections, as well as for employees with PC-based IP phones, which are known as soft phones.

to the planned rollout as a 'journey.'

All of those devices lack quality-of-service capabilities that can give voice traffic priority on networks to prevent disruptions in calls or videoconferences. For now, Terrill said, "we're being very conservative with soft phone implementations." Naughton added that Boeing is starting to implement quality-of-service technology on broadband connections used by employees who work at home.

One big corporate culture challenge that Boeing faces is bringing together its voice and data networking staffs to make the VoIP project work. The company has partly dealt with that by hiring for the project a group of about 10 traditional voice network engineers, who have also been trained to understand IP so they can deal with Cisco and subcontractors in making technical decisions about the rollout, Naughton said. 48181

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Scary Message

SCARY STUFF, these numbers from a new survey by the American Management Association and the ePolicy Institute: 20.1% of companies surveyed say they've had e-mail and instant messages subpoenaed. A bit more than 13% have been sued over employee e-mail. Only 6% archive IM, and 35.1% have an e-mail retention policy. Nearly 37% of employees aren't sure which messages should be saved, and 6% have sent or received a sexual, romantic or pornographic instant message.

Yeah, these numbers are scary — but not scary enough to get your top management to budget more for proper e-mail and IM policy training and enforcement, are they?

And no wonder. The numbers don't add up. It's hard to quantify the risk of slack messaging management, even with the possibility of lawsuits or regulatory action. And it's often cheaper to pay a fine than it is to obey the law. Too often, that's what drives management's spending decisions.

Is that a good thing? No. But it's reality.

Remember back in December 2002, when five Wall Street firms got slapped with fines of $1.65 million each because their systems for archiving e-mail were inadequate? I chalked that up to management's failure to recognize the price of not investing in its systems.

But as readers told me later, it could be that management was thinking about the big potential legal costs of having that e-mail easily accessible in a lawsuit — like the one that had just cost another investment firm a $100 million fine, largely as a result of evidence in e-mails. As one reader put it, "It didn't take these guys long to figure out how to save themselves $98.35 million."

So good e-mail and IM policies might actually be riskier than lame policies. No matter how cynical that calculation may be, it will feed into the budget decision.

Add the fact that good policies have real costs — serious training for users to learn them, extra work for managers to enforce them and, yes, hardware and software to make them all work — and it's pretty clear why scare tactics won't get management off the dime. There are just too many dollars on the other side.

Unfortunately, that makes it tough for IT. We know good e-mail and IM management is good business — expensive, perhaps, but necessary. A day will come when our organizations will need archived e-mails and IMs to defend against lawsuits, get rid of bad-apple employees and solve real business problems.

But those are all potential future benefits. How do we make a business case for good messaging policy right now?

By using it to get rid of real dollars we're spending right now.

No, we can't quantify the potential cost of employees behaving badly on e-mail and IM. But our help desk logs can tell us the cost of solving e-mail- and IM-related problems. Spam, viruses and worms cost both IT and users time — and sometimes downtime. User training can cut those costs. That puts a hard dollar value on e-mail and IM training.

And it turns training into a cost-reduction project, which is more appealing to budgeteers.

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FRANK HAYES, *Computerworld*'s senior news columnist, has covered IT for more than 20 years. Contact him at frank_hayes@computerworld.com.

And once we've got policy training in hand, we've undercut those cynical calculations about the risks of e-mail and IM retention.

Sure, top management should push for good e-mail and IM policies. But that won't happen. So it's up to IT. Why? Because that's our job. Because we're not cynical. But mainly because we'll actually show it will cut costs. When it comes to making this business case, we're the only ones who can.

Now *there's* a scary thought, eh?

48173

Enlightenment

This soon-to-graduate pilot fish is interviewing for a technical sales job, and she's sure the hiring manager is impressed with her communication skills. "But the company owner wasn't too sure about how techie a female could be," fish says. "Then the power went out – a road crew had sliced a cable. Being the true girl geek that I am, I pulled my Mini Maglite from my purse and turned it on and calmly continued the interview. They looked at me with astonishment, so I said, 'Hey, I may be a girl, but I *am* an engineer. Of *course* I have a flashlight.' They told me I had the job."

SHARK TANK

All Wet

It's long ago, and this pilot fish discovers that the electricians who built custom power cables for his company's monitors soldered them instead of crimping them. So the electricians return to make things right, and fish tests the results. "I turned on a monitor," says fish, "and got a light show of frying electronics." He checks the connector, and it feels not just warm, but damp – as though the cable's plastic covering has melted. "Would water do that?" asks the electrician's apprentice. "After we soldered them, they were so hot that we dipped them in water to cool them off."

Gee, Why Not?

New corporate policy says *everyone* must use the help desk, so to stay in compliance, IT pilot fish calls when he has a PC problem. He watches as, by remote control, they do all the troubleshooting he has already tried. "Then I noticed they went to a command prompt and typed 'ipconfig /release,' breaking the connection," fish says. "Over the phone, I could hear them trying to type commands. After about five minutes I heard a big sigh, and I decided to tell them I would type 'ipconfig /renew' to let them back on my system, since remote admin worked through TCP/IP. I've since decided not to call them anymore."

But Other Than That, It's Fine

Back when a mainframe disk drive unit was a huge box sitting on the floor, pilot fish's data center installs one, and everything seems to be working properly. But every now and then, operators hear a beep from the area of the drive unit. "No one could figure out what it was," says fish. Computer room staffers check the manuals, look for error indicators and even call in the vendor's customer engineer, who takes the disk drive unit apart but can't find the problem. Finally, someone manages to track down the cause. "It was a smoke detector above the disk drive," fish sighs. "It was beeping to notify the owner to change the battery."

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FRANK HAYES ▪ FRANKLY SPEAKING

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Q 48173

[redacted]

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